Honeywell

OneWireless

XYR 6000 Transmitters

Quick Start Guide

34-XY-25-21
Revision 9
October 2010

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About This Document

This document describes mounting, installation and wiring of the XYR 6000 Wireless Transmitters and antennae. Configuration, authentication and operation are covered in other documents.

Honeywell does not recommend using devices for critical control where there is a single point of failure or where single points of failure result in unsafe conditions. OneWireless is targeted at open loop control, supervisory control, and controls that do not have environmental or safety consequences. As with any process control solution, the end-user must weigh the risks and benefits to determine if the products used are the right match for the application based on security, safety, and performance. Additionally, it is up to the end-user to ensure that the control strategy sheds to a safe operating condition if any crucial segment of the control solution fails.

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ATEX approval updates	8	March 2010
ISA Battery Pack added	9	August 2010

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title	Document number
Getting Started with Honeywell OneWireless Solutions	OW-CDX010
OneWireless Wireless Builder User's Guide	OW-CDX060
OneWireless Builder Parameter Reference	OW-CDX070
OneWireless XYR 6000 Pressure Transmitter User's Manual	34-XY-25-15
OneWireless XYR 6000 Temperature and DI Transmitter User's Manual	34-XY-25-16
OneWireless XYR 6000 HLAI Transmitter User's Manual	34-XY-25-17
OneWireless XYR 6000 SmartCET Corrosion Transmitter User's Manual	34-XY-25-18
OneWireless XYR 6000 Multi Discrete Input Transmitter User's Manual	34-XY-25-27
OneWireless XYR 6000 Universal Input/Output User's Manual	34-XY-25-30

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Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user, often in terms of performing a task.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING, Risk of electrical shock: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	ESD HAZARD: Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	Protective Earth (PE) terminal: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	Functional earth terminal: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	Earth Ground: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	Chassis Ground: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

continued

Symbol	Definition
	The Factory Mutual® Approval mark means the equipment has been rigorously tested and certified to be reliable.
	The Canadian Standards mark means the equipment has been tested and meets applicable standards for safety and/or performance.
	The Ex mark means the equipment complies with the requirements of the European standards that are harmonised with the 94/9/EC Directive (ATEX Directive, named after the French "ATmosphere EXplosible").
	For radio equipment used in the European Union in accordance with the R&TTE Directive the CE Mark and the notified body (NB) identification number is used when the NB is involved in the conformity assessment procedure. The alert sign must be used when a restriction on use (output power limit by a country at certain frequencies) applies to the equipment and must follow the CE marking.
	The C-Tick mark is a certification trade mark registered to ACMA (Australian Communications and Media Authority) in Australia under the Trade Marks Act 1995 and to RSM in New Zealand under section 47 of the NZ Trade Marks Act. The mark is only to be used in accordance with conditions laid down by ACMA and RSM. This mark is equal to the CE Mark used in the European Union. N314 directly under the logo is Honeywell's unique supplier identification number.

Contents

Support and contact info ..... **iv**

1. INTRODUCTION **1**

1.1 Site preparation **1**

1.2 European Union Usage **1**

1.3 Certifications and approvals **2**

Hazardous location certifications 2
Radio certifications 3
Radio Frequency (RF) statement 3
European Union restriction 3
Restriction 3
Japanes Restrictions 3

2. TRANSMITTER MOUNTING **6**

2.1 Weight **6**

2.2 Dimensions **6**

2.3 Transmitter location **12**

Pressure models 12

2.4 Conduit / Cable Entries **12**

2.5 Bracket mounting **13**

Attach bracket to pipe 13
Attach transmitter to bracket 14

2.6 Rotate transmitter housing **15**

2.7 Rotate display **15**

Tools required 15
Procedure 15

3. PROCESS INSERTION **17**

3.1 Pressure models **17**

Piping 17
Process connections 19
General piping guidelines 19

3.2 Temperature and Discrete Input models **20**

Insert probe into process 20
Integral probe wiring 20
Remote probe wiring 20

3.3 HLAI models **21**

Connect wiring 21

3.4 Universal I/O **22**

Connect wiring 22
Wiring for calibration – XYR6000 Universal I/O Wiring Diagrams for AI/DI (Model STUW700) 23
Wiring for calibration – XYR 6000 Universal I/O Wiring Diagrams for AI/DI/DO (Model STUW701) 24

3.5 Corrosion models....26
Probe mounting locations....26
Probe installation....29
Connect wiring....30

4. ANTENNA ADJUSTMENT AND MOUNTING....31

4.1 Requirements....31
Radio installation requirements....31

4.2 Integral antenna....31
Elbow....32
Straight....32

4.3 Remote antenna....33
Outdoor installation warnings....33
Choosing a Mounting Location....34
Site Selection....34
Mounting the Antenna....35
Directional mounting procedure....37
Omnidirectional mounting procedure....38
Grounding the antenna....38

5. START UP....40

5.1 Battery Power Option....40
Connect batteries....40
IS Battery Holder, 50025288-502....41
IS Battery Pack, 50047517-501....43
24 Vdc Power Supply Option (DC) System Diagram....45

5.2 Display sequence....46

5.3 Provisioning....46

6. CERTIFICATION INSTALLATION REQUIREMENTS....47

6.1 Certification Drawings....47

Tables

Table 2-1Display adjustment 16
Table 5-1: Battery replacement procedure 42
Table 5-2: IS Battery Pack replacement procedure 43

Figures

Figure 1 Temperature/DI/Multi DI/HLAI/Corrosion transmitter dimensions 6
Figure 2 Universal I/O Temperature/DI/Multi DI/HLAI/Corrosion antenna dimensions 7
Figure 3 DP/DHGP Pressure transmitter dimensions 8
Figure 4 DP/DHGP Pressure antenna dimensions 9
Figure 5 GP/AP Pressure transmitter dimensions 10
Figure 6 GP/AP Pressure antenna dimensions 11
Figure 7 Common bracket orientations 13
Figure 8 Rotating transmitter housing 15
Figure 9 Display rotation 16
Figure 10 Typical 3-valve manifold and blow-down piping arrangement 17
Figure 11 Typical Arrangement for ½" NPT Process Connection Piping 18
Figure 12 Temperature probes 20
Figure 13 HLAI connection 21
Figure 14 Voltage input wiring 21
Figure 15 Current input wiring 21
Figure 16 Universal I/O Connection 22
Figure 17 Corrosion transmitter with remote probe 30
Figure 18 Elbow antenna adjustment 32
Figure 19 Integral straight antenna 32
Figure 20 Directional antenna mounting 37
Figure 21 Omnidirection antenna mounting 38
Figure 22: Battery assembly 41
Figure 2: IS Battery Pack 43
Figure 24 Power Option 24V 44
Figure 25 External 24V Power Module 44
Figure 26 Power Supply 24 Vdc Option (DC) System Diagram 45

1. Introduction

1.1 Site preparation

Wireless devices require proper site preparation to ensure optimum performance and safety compliance. Do not proceed until you have done the proper planning described in the Wireless Planning Guide.

1.2 European Union Usage

This product may be used in any of the following European Union nations.

Country	ISO 3166 2 letter code	Country	ISO 3166 2 letter code
Austria	AT	Latvia	LV
Belgium	BE	Liechtenstein	LI
Bulgaria	BG	Lithuania	LT
Cyprus	CY	Malta	MT
Czech Republic	CZ	Netherlands	NL
Denmark	DK	Norway	NO
Estonia	EE	Poland	PL
Finland	FI	Portugal	PT
France	FR	Romania	RO
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Sweden	SE
Ireland	IE	Switzerland	CH
Italy	IT	United Kingdom	BG

1.3 Certifications and approvals

Hazardous location certifications

Refer to product label for applicable approvals.

Approval / Item	Ratings / Description
CSAcus Intrinsically Safe	CL I, Div 1, Groups A, B, C, & D; CL II, Div 1, Groups E, F & G; CL III, T4 CL I, Zone 0: Ex ia IIC, T4; CL I, Zone 0: AEx ia IIC, T4
CSAcus Explosion proof	CL I, Div 1, Groups A, B, C, & D; CL II, Div 1, Groups E, F & G; CL III, T4 CL I, Zone 1: Ex d IIC, T4; CL I, Zone 1: AEx d IIC, T4
CSAcus Non-incendive	CL I, Div 2, Groups A, B, C & D; CL II, Div 2, Groups F & G; CL III, Div 2, T4 CL I, Zone 2: Ex nA IIC, T4; CL I, Zone 2: AEx nA IIC, T4
FM Approvals Intrinsically Safe	CL I, Div 1, Groups A, B, C, & D; CL II, Div 1, Groups E, F & G; CL III, T4 CL I, Zone 0: AEx ia IIC, T4
FM Approvals Explosion proof	CL I, Div 1, Groups A, B, C, & D; CL II, Div 1, Groups E, F & G; CL III, T4 CL I, Zone 1: AEx d IIC, T4
FM Approvals Non-incendive	CL I, Div 2, Groups A, B, C & D; CL II, Div 2, Groups F & G; CL III, Div 2, T4 CL I, Zone 2: AEx nA IIC, T4
HON – ATEX Non-Sparking	Ⓔx II 3 GD, Ex nA IIC, T4; Ta = 85°C, Zone 2
KEMA 08 ATEX0062X Intrinsically Safe Flameproof Non-Sparking	Ⓔx II 1 GD Ex ia IIB; T4 Ta = 70ºC; Ex tD A20 IP66 T90ºC Ⓔx II 2 GD Ex d [ia] IIB; T4 Ta = 70ºC; Ex tD A21 IP66 T90ºC Ⓔx II 3 GD Ex nA [nL] IIC; T4 Ta = 85ºC; Ex tD A22 IP66 T90ºC
IECEx CSA 08.0007X Intrinsically Safe Flameproof Non-Sparking	Ex ia IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC Ex d [ia] IIB; T4 Ta = 70ºC; DIP A21 IP66 T90ºC Ex nA [nL] IIC; T4 Ta = 85ºC; DIP A22 IP66 T90ºC
Process Connections in Division 2 / Zone 2	⚠ Division 2 / Zone 2 apparatus may only be connected to processes classified as non-hazardous or Division 2 / Zone 2. Connection to hazardous (flammable or ignition capable) Division 1 / Zone 0, or 1 process is not permitted.
Enclosure Type	Type 4X, IP 66
CRN	Canadian Registration Number
Class II and III installations and Type 4X/IP66 applications require that all cable and unused entries be sealed with a NRTL (National Recognized Testing Laboratory) listed cable gland or conduit plug. Cable glands and conduit plugs are not supplied with the product.	

Radio certifications

Agency	Certification	Description
Federal Communications Commission (FCC)	FCC ID: S5750016517 or FCC ID: S5750025034	The XYR 6000 Wireless Transmitters comply with part 15 of the FCC rules. Operation is subject to the following two conditions. (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Industry Canada (IC)	IC: 573I-50016517 or IC: 5731-50025034	The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF fields in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's web site www.hc-sc.gc.ca/rpb.

Radio Frequency (RF) statement

To comply with FCC's and Industry Canada's RF exposure requirements, the following antenna installation and device operating configurations must be satisfied.

- Remote Point-to-Multi-Point antenna(s) for this unit must be fixed and mounted on outdoor permanent structures with a separation distance between the antenna(s) of greater than 20cm and a separation distance of at least 20cm from all persons.
- Remote Fixed Point–to-Point antenna(s) for this unit must be fixed and mounted on outdoor permanent structures with a separation distance between the antenna(s) of greater than 20cm and a separation distance of at least 100cm from all persons.
- Furthermore, when using integral antenna(s) the XYR 6000 Wireless Transmitter unit must not be co-located with any other antenna or transmitter device and have a separation distance of at least 20cm from all persons.

European Union restriction

The XYR 6000 Wireless Transmitters are in conformity with the applicable portions of the ETSI standards as required by the R&TTE Directive 1999/5/EC.

Restriction

France restricts outdoor use to 10mW (10dBm) EIRP in the frequency range of 2,454-2,483.5 MHz. Installations in France must limit EIRP to 10dBm, for operating modes utilizing frequencies in the range of 2,454 – 2,483.5MHz.

Japanes Restrictions

For locations in Japan the transmitter power is restricted to 12.14dBm/Mhz {(32mW (15.4 dBm)] maximum EIRP including the antenna.

ATTENTION: THIS PRODUCT IS SUPPLIED WITH PLASTIC DUST PLUGS IN THE CONDUIT/CABLE GLAND ENTRIES. IT IS THE USERS RESPONSIBILITY TO PROVIDE CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS SUITABLE FOR THE ENVIRONMENT IN WHICH THIS PRODUCT IS INSTALLED. WHEN INSTALLED IN A HAZARDOUS LOCATION THE CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS SHALL ADDITIONALLY BE SUITABLE FOR THE HAZARDOUS LOCATION, THE PRODUCT CERTIFICATION AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION FOR THE INSTALLATION.

Product Ratings

Item	Rating / Description	Power Option Code	Certification	Pressure	Temperature (Integral Probe) / DI	Corrosion with Remote Probe**	Temperature / Discrete Input (Remote Inputs)	High Level Analog Input (HLAI)	Universal I/O
Process Connections	WARNING – Division 2 / Zone 2 apparatus must only be connected to a non-hazardous process	BA (Battery), DC (24Vdc Supply)	CSA, FM, ATEX, IECEx & SAEx	YES	---------	YES	---------	---------	---------
Process Limits	Maximum Process Temperature	BA (Battery), DC (24Vdc Supply)	CSA, FM, ATEX, IECEx & SAEx	+125ºC	+85ºC	Probe Rating	Sensor Rating	---------	---------
	Maximum Allowable Pressure (MAWP)	BA (Battery), DC (24Vdc Supply)	CSA, FM, ATEX, IECEx & SAEx	Meter Body MAWP Rating	Probe / Thermowell MAWP Rating	Probe MAWP Rating	---------	---------	---------
Wireless Transmitters	Hazardous Location Protection Type	BA (Battery), DC (24Vdc Supply)	CSA, FM, ATEX, IECEx & SAEx	XP, IS, NI, Non-Sparking	IS, NI, Non-Sparking	IS, NI, Non-Sparking	XP, IS, NI, Non-Sparking	XP, IS, NI, Non-Sparking	XP, IS, NI, Non-Sparking
	Ambient Temperature Limits	BA (Battery)	CSA & FM Div 1, Div 2, Zone 0, 1 & 2	-40 to +85ºC	-40 to +85ºC	-30 to +85ºC	-40 to +85ºC	-40 to +85ºC	-40 to +85ºC
		DC (24Vdc Supply)	CSA & FM Div 1, Div 2, Zone 0, 1 & 2	-40 to +80ºC	-40 to +80ºC	-30 to +80ºC	-40 to +80ºC	-40 to +80ºC	-40 to +80ºC
		BA (Battery)	ATEX, IECEx & SAEx Zone 0 & 1	-40 to +70ºC	-40 to +70ºC	-30 to +70ºC	-40 to +70ºC	-40 to +70ºC	-40 to +70ºC
			ATEX, IECEx & SAEx Zone 2	-40 to +84ºC	-40 to +84ºC	-30 to +84ºC	-40 to +84ºC	-40 to +84ºC	-40 to +84ºC
		DC (24Vdc Supply)	ATEX, IECEx & SAEx Zone 0 & 1	-40 to +70ºC	-40 to +70ºC	-30 to +70ºC	-40 to +70ºC	-40 to +70ºC	-40 to +70ºC
			ATEX, IECEx & SAEx Zone 2	-40 to +80ºC	-40 to +80ºC	-30 to +80ºC	-40 to +80ºC	-40 to +80ºC	-40 to +80ºC

Product Ratings, continued

Item	Rating / Description	Power Option Code	Certification	Pressure	Temperature (Integral Probe) / DI	Corrosion with Remote Probe**	Temperature / Discrete Input (Remote Inputs)	High Level Analog Input (HLAI)	Universal I/O
Quantity of Entry Plugs Required (Supplied by the User)	*½ NPT	BA (Battery)	CSA & FM Div 1 & Div 2	2	1	1	1	1	1
	M20		ATEX, IECEx & SAEx Zone 0 & 1	2	1	1	1	1	1
	*½ NPT	DC (24Vdc Supply)	CSA & FM Div 1 & Div 2	1	1 / 0	0	0	0	0
	M20		ATEX, IECEx & SAEx Zone 0 & 1	1	1 / 0	0	0	0	0
Field Wiring Connections (Supplied by the User)	Rigid Metal Conduit per Electrical Code	BA (Battery)	CSA & FM Explosion proof, Div 1	---	---	---	YES	YES	YES
		DC (24Vdc Supply)	CSA & FM Explosion proof, Div 1	YES	---	---	YES	YES	YES
	Ordinary Location Conduit (EMT, PVC, Etc.)	BA (Battery)	CSA & FM Non-Incendive, Div 2, ATEX, IECEx & SAEx, Zone 0, 1 & 2	---	---	---	YES	YES	YES
		DC (24Vdc Supply)	CSA & FM Non-Incendive, Div 2, ATEX, IECEx & SAEx, Zone 0, 1 & 2	YES	YES	YES	YES	YES	YES
	Cable and Cable Gland	BA (Battery)	CSA & FM Non-Incendive, Div 2, ATEX, IECEx & SAEx, Zone 0, 1 & 2	---	---	---	YES	YES	YES
		DC (24Vdc Supply)	CSA & FM Non-Incendive, Div 2, ATEX, IECEx & SAEx, Zone 0, 1 & 2	YES	YES	YES	YES	YES	YES

* ½ NPT entries may be specified for ATEX, IECEx and SAEx certifications.

** Cable gland supplied by the user is required for Corrosion Probe.

2. Transmitter Mounting

2.1 Weight

Transmitter model	Weight
STDW9xx STGW9x4	11 lbs (5 kg)
STGW9xL STAW94L	7 lbs (3.2 kg)
STIW400 STTW40x STTW500 STIW600 STUW700 STUW701 STTW8x0 CETW6000M	6 lbs (2.7 kg)

2.2 Dimensions

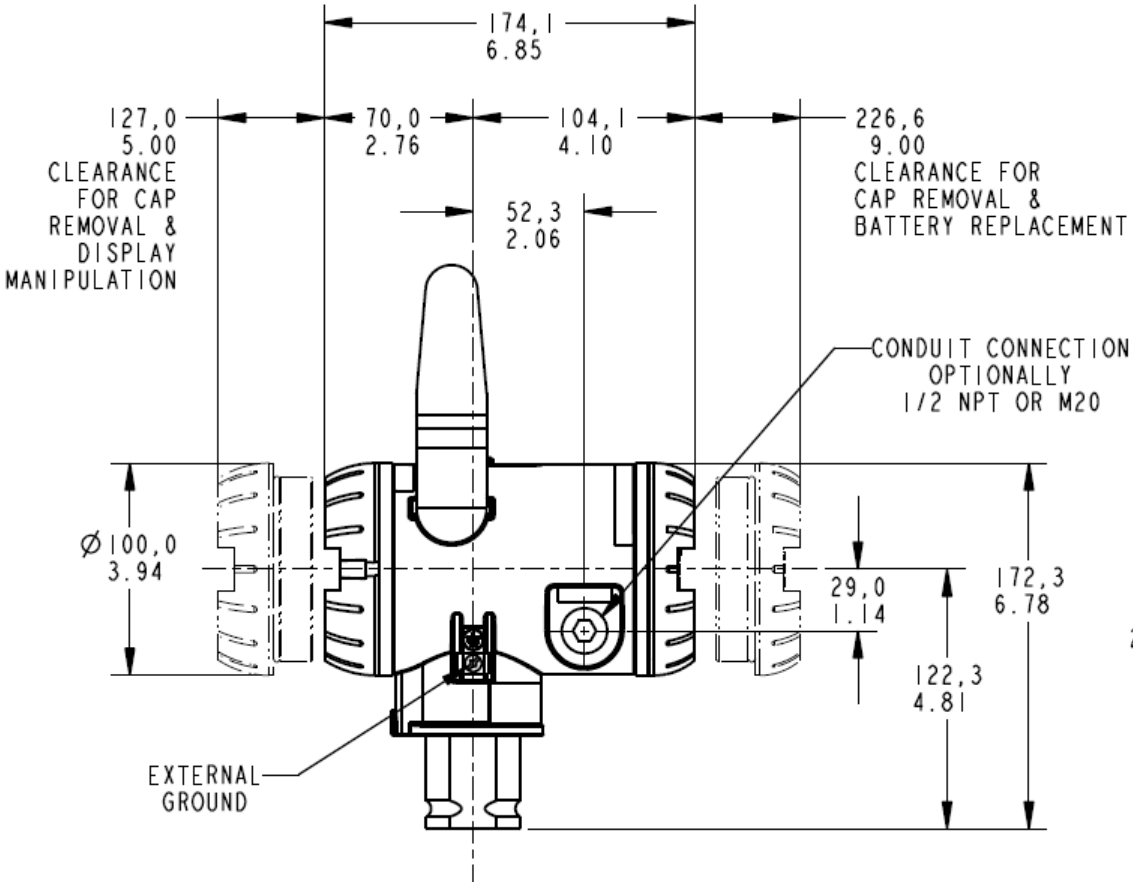


Figure 2-1 Temperature/DI/Multi DI/HLAI/Corrosion transmitter dimensions

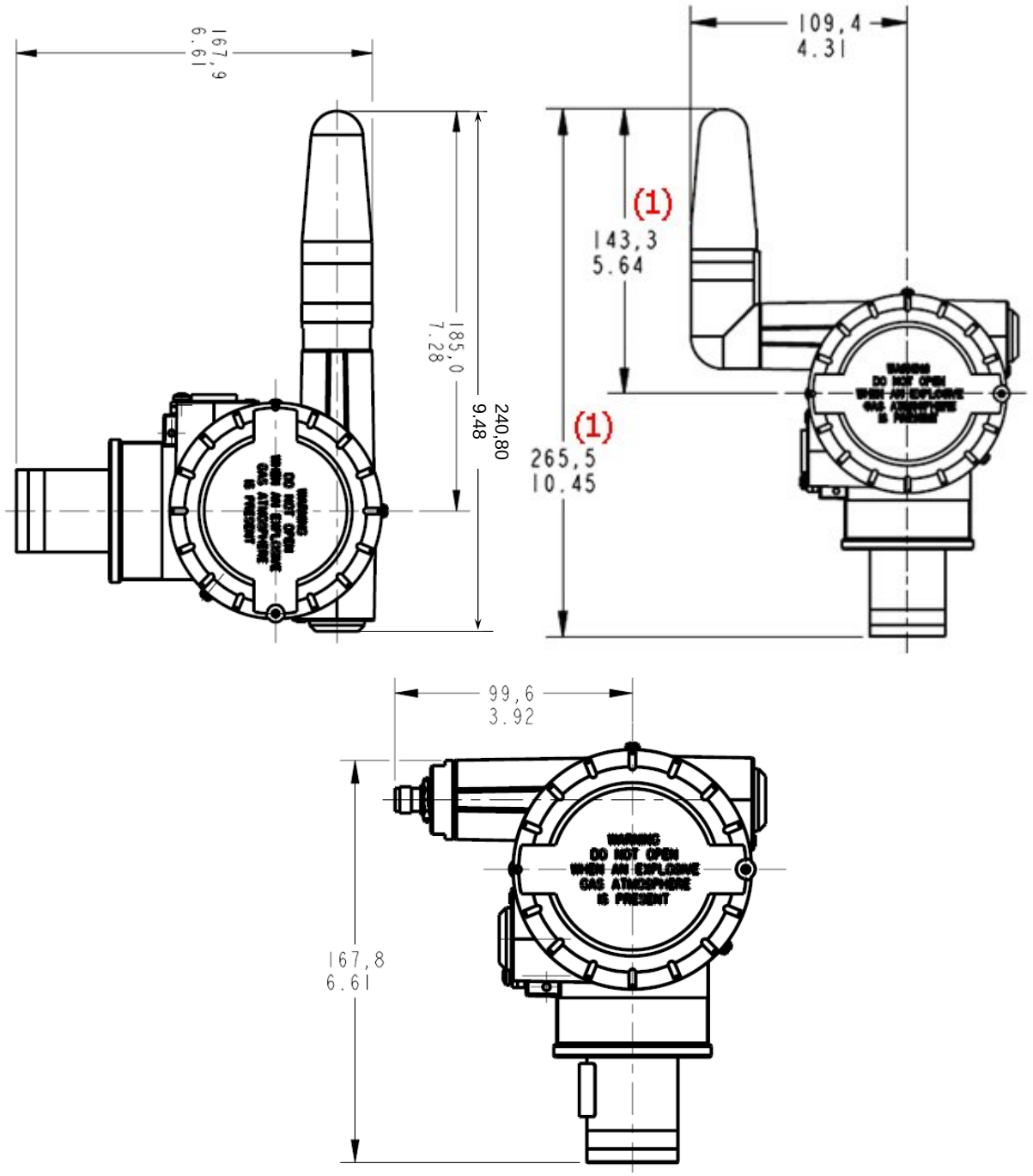


Figure 2-2 Universal I/O Temperature/DI/Multi DI/HLAI/Corrosion antenna dimensions

(1) Add 139,0mm/5.47 in. To these dimensions for transmitters supplied with 4 dBi Antenna option.

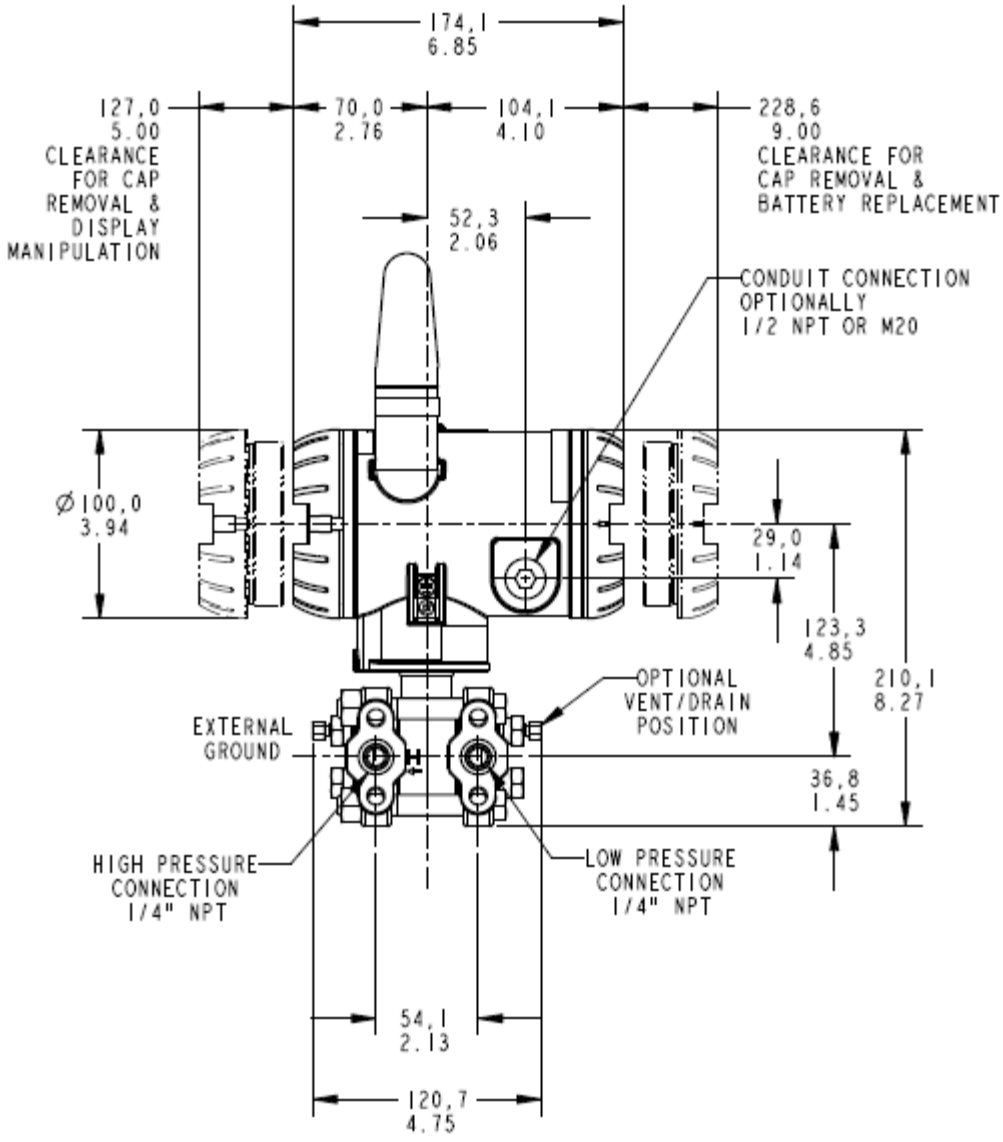


Figure 2-3 DP/DHGP Pressure transmitter dimensions

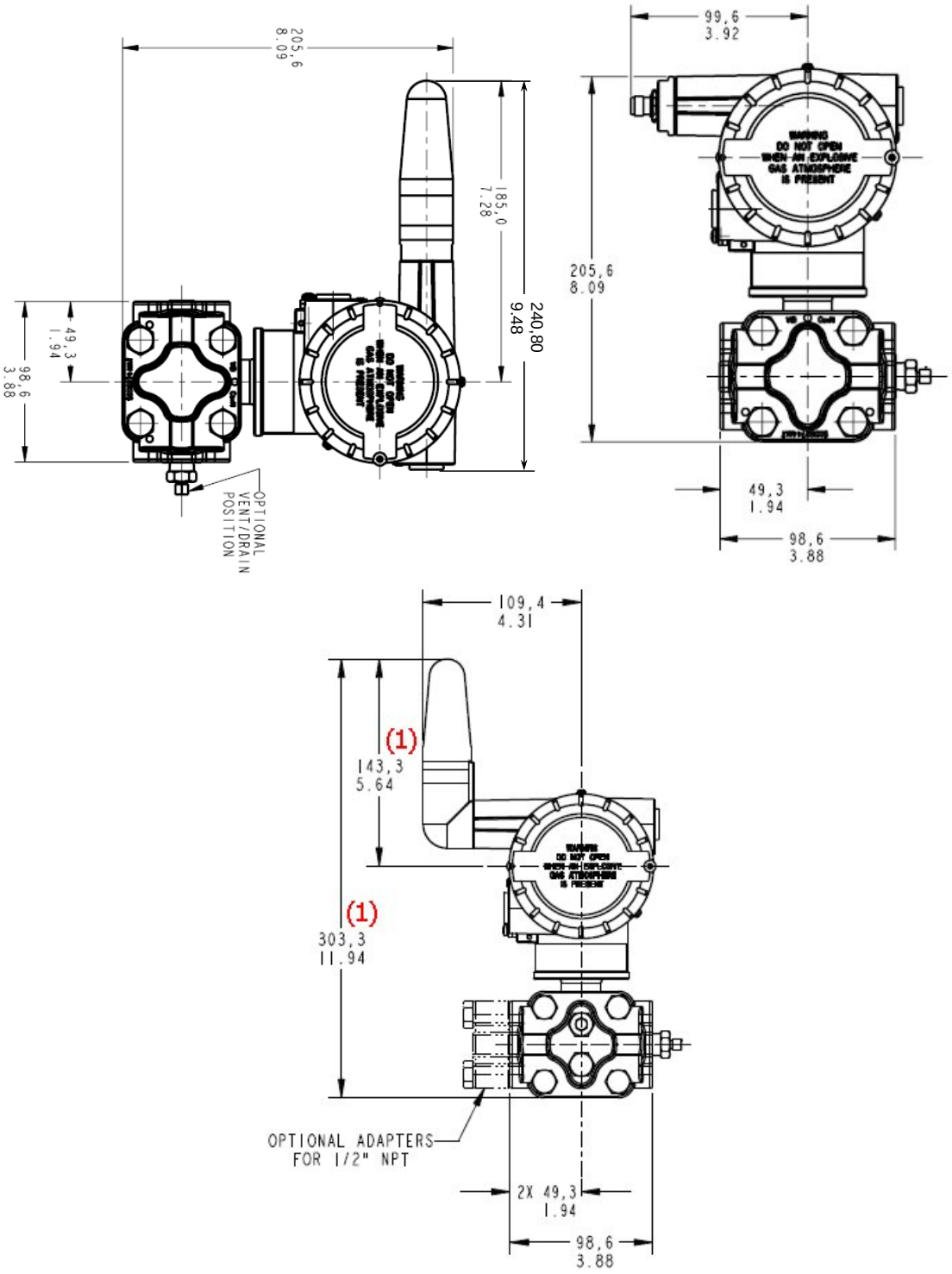


Figure 2-4 DP/DHGP Pressure antenna dimensions

(1) Add 139,0mm/5.47 in. To these dimensions for transmitters supplied with 4 dBi Antenna option.

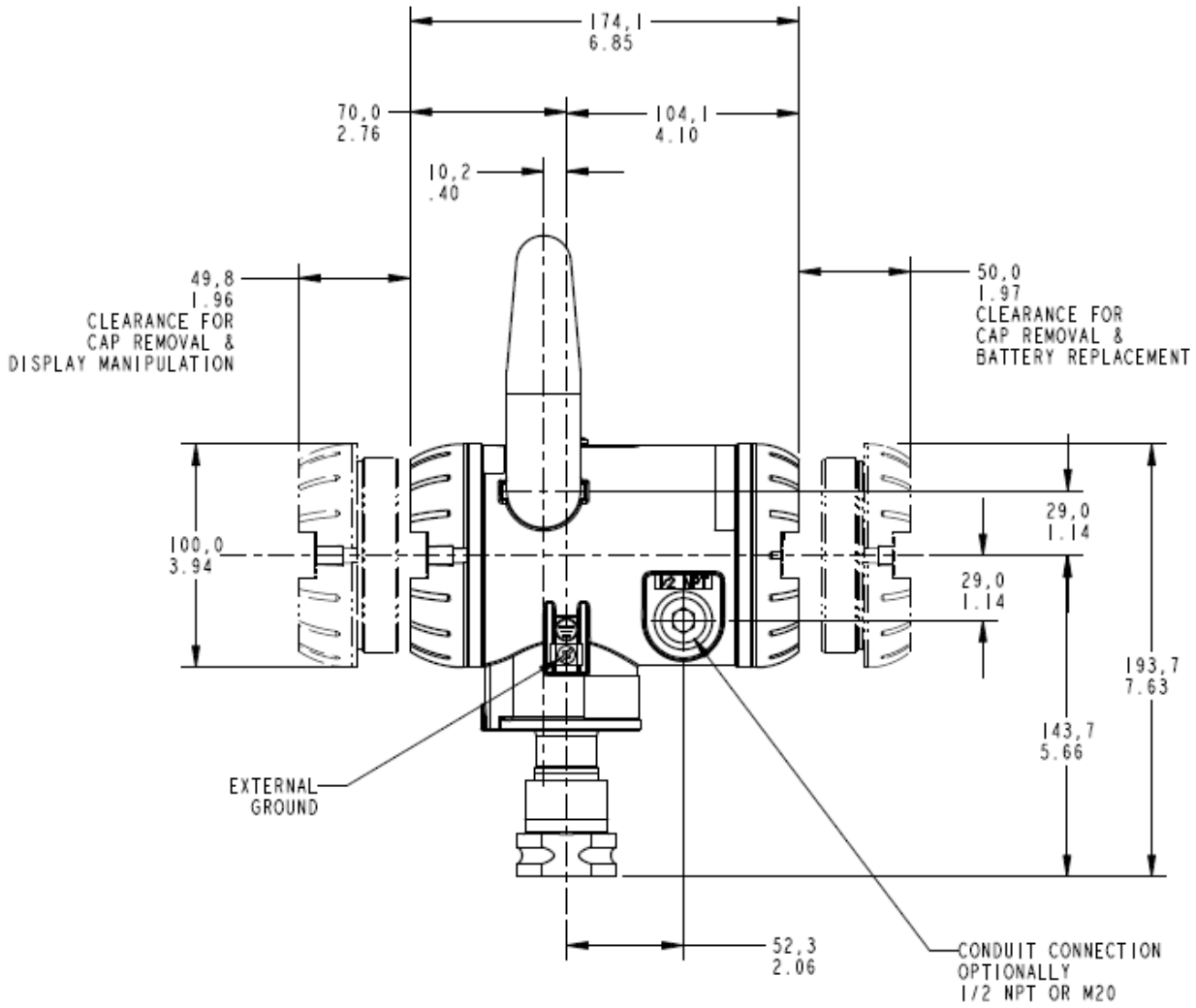


Figure 2-5 GP/AP Pressure transmitter dimensions

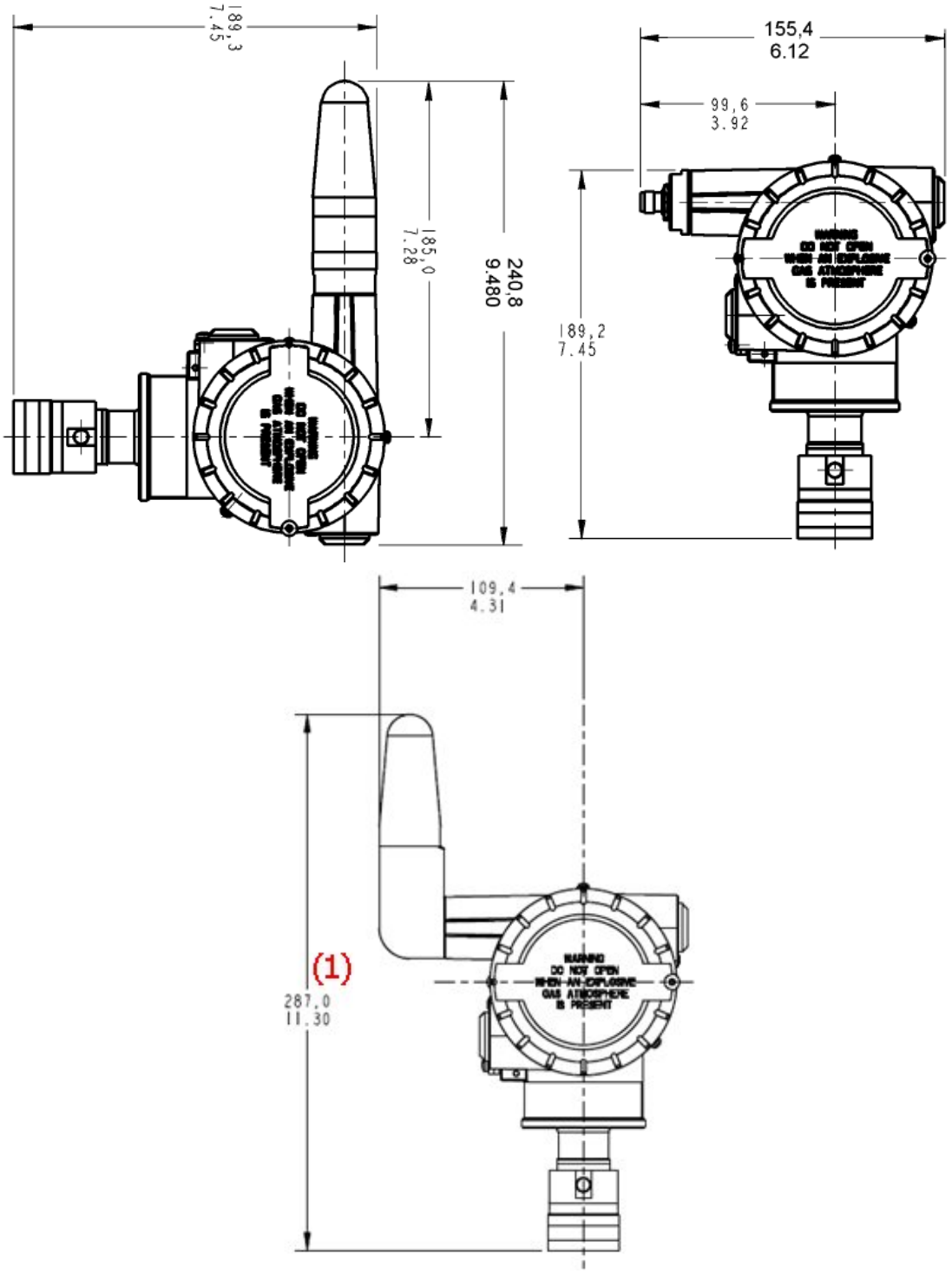


Figure 2-6 GP/AP Pressure antenna dimensions

(1) Add 139,0mm/5.47 in. To these dimensions for transmitters supplied with 4 dBi Antenna option.

2.3 Transmitter location

Pressure models

Process	Suggested location	Explanation
Gases	Above the gas line	The condensate drains away from the transmitter.
Liquids	• Below but close to the elevation of the process connection. • Level with or above the process connection.	• This minimizes the static head effect of the condensate. • This requires a siphon to protect the transmitter from process steam. The siphon retains water as a “fill fluid.”

2.4 Conduit / Cable Entries

NOTICE

THIS PRODUCT IS SUPPLIED WITH PLASTIC DUST PLUGS IN THE CONDUIT/CABLE GLAND ENTRIES. IT IS THE USERS RESPONSIBILITY TO PROVIDE CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS SUITABLE FOR THE ENVIRONMENT IN WHICH THIS PRODUCT IS INSTALLED. WHEN INSTALLED IN A HAZARDOUS LOCATION THE CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS SHALL ADDITIONALLY BE SUITABLE FOR THE HAZARDOUS LOCATION, THE PRODUCT CERTIFICATION AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION FOR THE INSTALLATION

2.5 Bracket mounting

Attach bracket to pipe

Figure 2-7 shows some commonly used bracket and pipe orientations. Not all possibilities are shown; you can use any bracket (flat or angle) and orientation (parallel or transverse) to get the desired transmitter positioning.

Position bracket on 2-inch (50.8 mm) pipe and install “U” bolt around pipe and through holes in bracket. Secure with nuts and lockwashers provided.

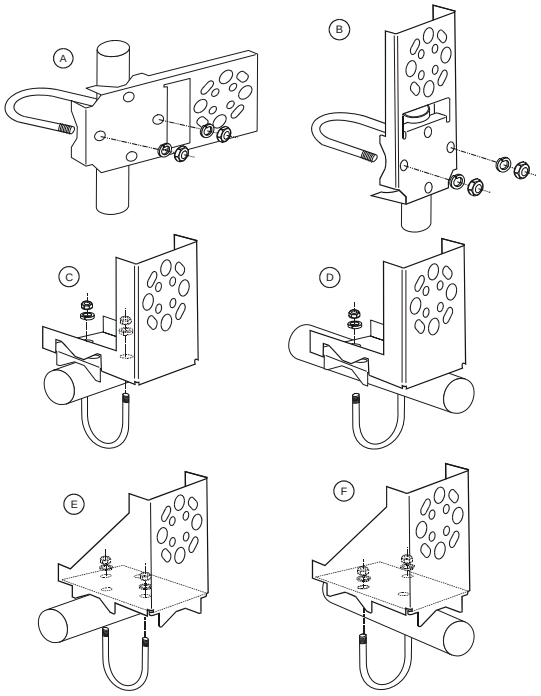
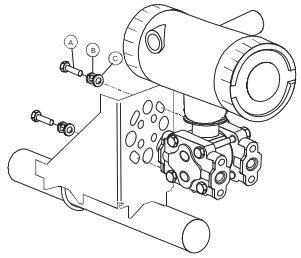
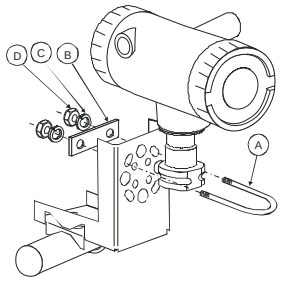


Figure 2-7 Common bracket orientations

Attach transmitter to bracket

Align appropriate mounting holes in transmitter with holes in bracket and secure the transmitter to the bracket with bolts and washers provided.

If the meter body is hexagonal, you must use the additional bracket supplied. If meter body is round, discard the bracket.

Transmitter type	Attachment to bracket	Example
DP type with double-ended process heads and/or remote seals	Alternate mounting holes in end of heads.	
Dual head GP	Mounting holes in end of process head	
In-line GP and AP (LGP model)	Smaller “U” bolt.	
Temperature/DI	Smaller “U” bolt.	
Multiple DI	Smaller “U” bolt.	
High Level Analog Input	Smaller “U” bolt.	
Corrosion	Smaller “U” bolt.	
Universal I/O	Smaller “U” bolt.	

2.6 Rotate transmitter housing

You can rotate the transmitter for better viewing, access, or antenna position. Loosen set screw (see A in Figure 2-8) on outside neck of transmitter one full turn. Rotate transmitter housing up to 180 degrees in either direction to desired position.

CAUTION Do not rotate the housing past 180 degrees in any direction or you could damage the internal wiring.

Tighten set screw.

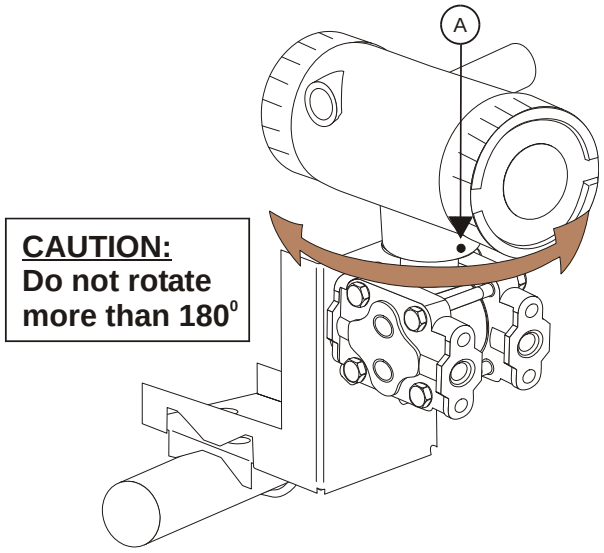


Figure 2-8 Rotating transmitter housing

2.7 Rotate display

If the transmitter's mounting is such that the display is not horizontal, you can rotate the display in 90 degree increments to provide horizontal viewing.

Tools required

- #1 Phillips Screwdriver or 1/8" Slotted Screwdriver
- Torque Screwdriver
- 1.5 mm hex key

Procedure

WARNING

Risk of death or serious injury by explosion. Do not open transmitter enclosure when an explosive gas atmosphere is present.

CAUTION

Take precautions against electrostatic discharge to prevent damaging the display/sensor module.

Table 2-1Display adjustment

Step	Action
1	Honeywell recommends that the transmitter be removed from service and moved to a clean area before servicing.
2	Loosen the M3 locking set screw on the display end-cap. See item 1 in Figure 2-9. Unscrew and remove the end cap.
3	Loosen the two captive screws on the display/sensor module. See items 2 in Figure 2-9.
4	Rotate the display 90 or 180 degrees in either direction so the screws line up with the threaded holes. Do not rotate more than 180 degrees or you could damage the wires behind the display.
5	Re-attach the display's two captive screws. Tighten to 0,4 – 0,6 N-m (3.5 – 5.3 lb-in.).
6	Replace end cap and tighten M3 locking screw.

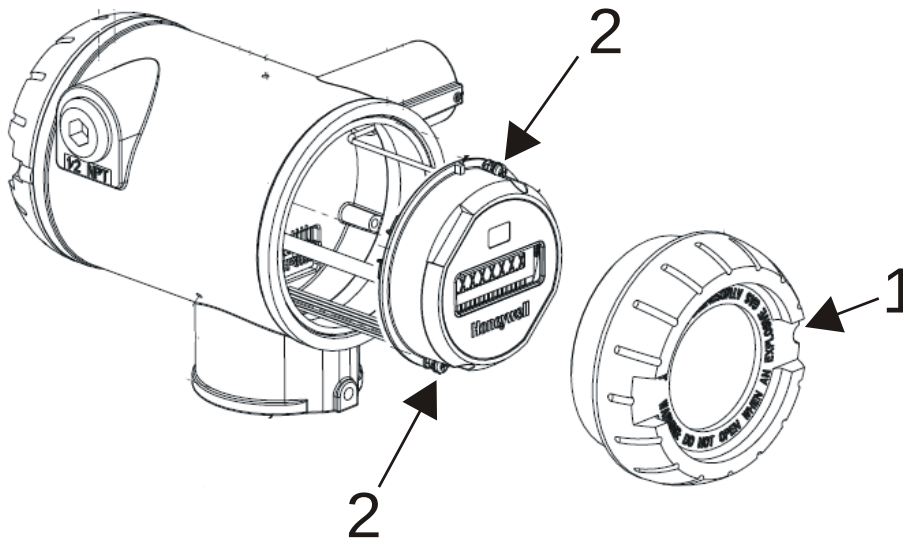


Figure 2-9 Display rotation

3. Process insertion

3.1 Pressure models

Piping

The actual piping arrangement will vary depending upon the process measurement requirements and the transmitter model. Except for flanged and remote diaphragm seal connections, process connections are made to ¼ inch or ½ inch NPT female connections in the process head of the transmitter's meter body. For example, a differential pressure transmitter comes with double ended process heads with ¼ inch NPT connections but they can be modified to accept ½ inch NPT through optional flange adapters. Some gauge pressure transmitters may have a ½ inch NPT connection which mounts directly to a process pipe.

The most common type of pipe used is ½ inch schedule 80 steel pipe. Many piping arrangements use a three-valve manifold to connect the process piping to the transmitter. A manifold makes it easy to install and remove or rezero a transmitter without interrupting the process. It also accommodates the installation of blow-down valves to clear debris from pressure lines to the transmitter.

Figure 3-1 shows a diagram of a typical piping arrangement using a 3-valve manifold and blow-down lines for a differential pressure transmitter being used to measure flow.

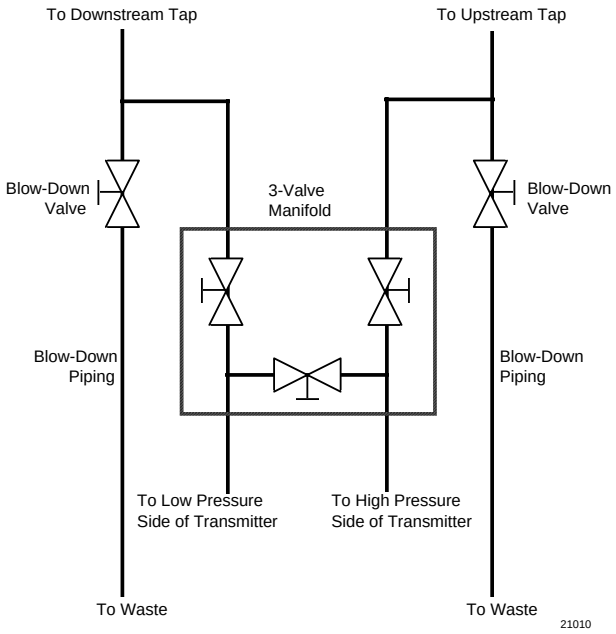


Figure 3-1 Typical 3-valve manifold and blow-down piping arrangement

Another piping arrangement uses a block-off valve and a tee connector in the process piping to the transmitter as shown in Figure 3-2.

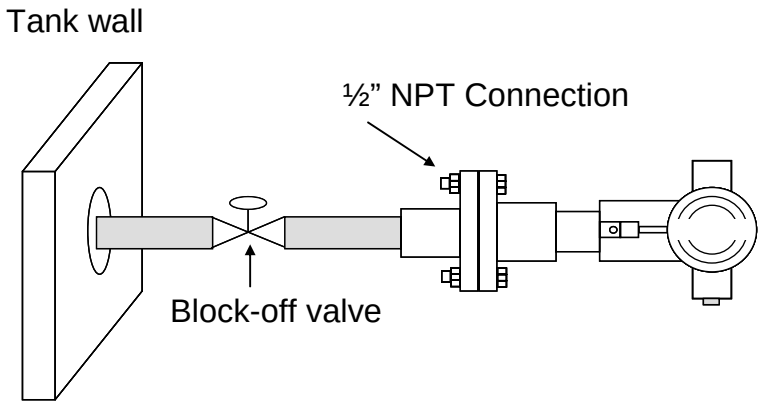


Figure 3-2 Typical Arrangement for ½" NPT Process Connection Piping

ATTENTION

For liquid or steam, the piping should slope a minimum of 25.4 mm (1 inch) per 305 mm (1 foot). Slope the piping down towards the transmitter if the transmitter is below the process connection so the bubbles may rise back into the piping through the liquid. If the transmitter is located above the process connection, the piping should rise vertically above the transmitter; then slope down towards the flowline with a vent valve at the high point. For gas measurement, use a condensate leg and drain at the low point (freeze protection may be required here).

CAUTION

Property damage may result if operating temperature limits of transmitter are exceeded. Electronics housing must not exceed 85° C [185° F], meterbody temperature limit may be rated higher. Consult transmitter nameplate for meterbody temperature limits. To reduce the temperature of the process that comes into contact with the transmitter meter body, install impulse piping. As a general rule there is a 56 degree C drop (100 degrees F) in the temperature of the process for every foot (305 mm) of ½ inch uninsulated piping.

Process connections

Transmitter Type	Process Connection
Differential Pressure	Process heads with ¼ inch NPT female connection Flange adapters and manifolds with ½ inch female connection are optional
Gauge Pressure	Process head with ½ inch NPT female connection In-line ½ inch NPT female connection In-line ½ inch NPT male 9/16 Aminco DIN19213n Process heads with ¼ inch NPT female connection Flange adapters and manifolds with ½ inch female connections are optional
Absolute Pressure	Process head with ½ inch NPT female connection In-line ½-inch NPT male 9/16 Aminco DIN19213n

General piping guidelines

When measuring fluids containing suspended solids, install permanent valves at regular intervals to blow-down piping.

Blow-down all lines on new installations with compressed air or steam and flush them with process fluids (where possible) before connecting these lines to the transmitter's meter body.

Be sure all the valves in the blow-down lines are closed tight after the initial blow-down procedure and each maintenance procedure after that.

3.2 Temperature and Discrete Input models

Insert probe into process

ATTENTION

It is your responsibility to supply a suitable sealing method or gasket and mounting hardware for the probe's service conditions.

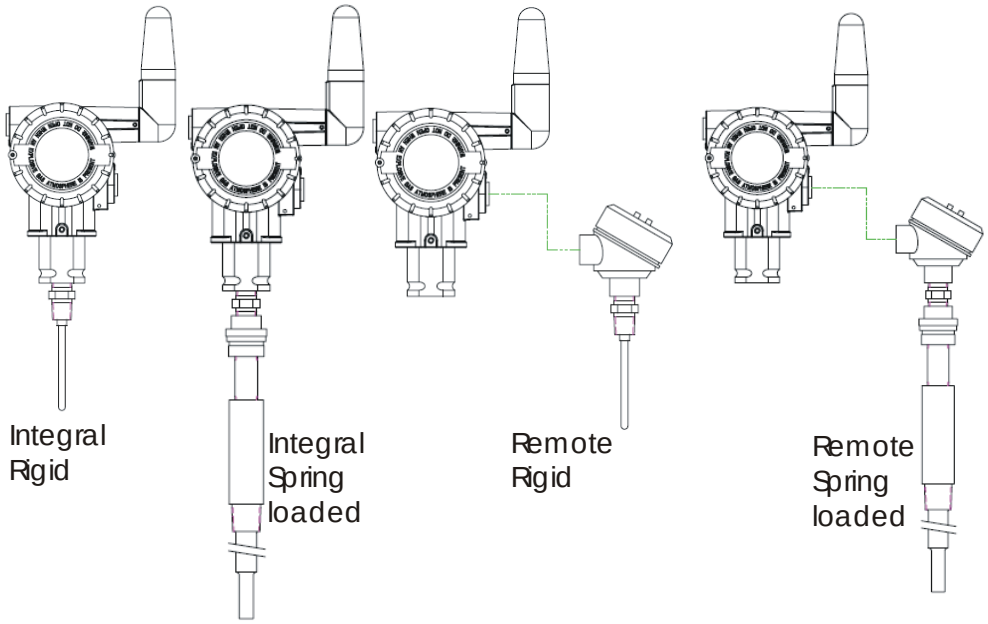


Figure 3-3 Temperature probes

Integral probe wiring

The integral probe is pre-wired to the transmitter at the factory.

Remote probe wiring

Step	Action
1	See Figure 3-3. Open the transmitter's rear end cap (opposite end from display) by loosening the M3 locking screw and unscrewing the end cap.
2	Open the cable gland (on right side below antenna). (Cable gland must be ordered as an option.)
3	Feed wiring (6 to 8 mm allowed diameter) through the cable gland and connect to terminal block. For terminal connections see info starting on page 47.
4	Plug battery connector into batteries. See page 40.
5	Close rear end cap and cable gland.
6	Tighten M3 locking screw on the rear end cap.

3.3 HLAI models

Connect wiring

Step	Action
1	See Figure 3-4. Open the rear end cap (opposite end from display) by loosening the M3 locking screw and unscrewing the end cap.
2	Open the cable gland (on right side below antenna). (Cable gland must be ordered as an option.)
3	Feed wiring (allowed diameter 6 to 8 mm) from other transmitter through the cable gland and connect to terminal block using either voltage or current but not both. See Figure 3-5 or Figure 3-6. For hazardous locations see info starting on page 47.
4	Plug battery connector into batteries.
5	Close rear end cap and cable gland.
6	Tighten M3 locking screw on the rear end cap.

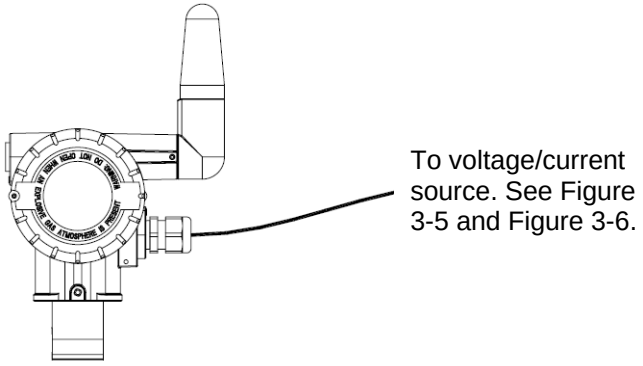


Figure 3-4 HLAI connection

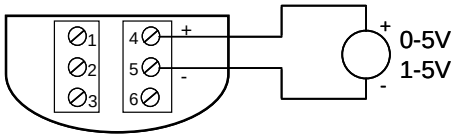


Figure 3-5 Voltage input wiring

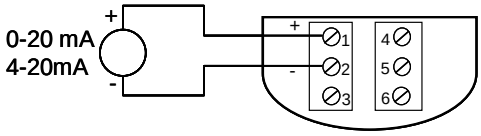


Figure 3-6 Current input wiring

3.4 Universal I/O

STUW700 – Three inputs (1-3) HLAI, (1-2) T/C, (1-2) Discrete Inputs

STUW 701 – Two inputs (1-2) HLAI, T/C, DI + One (1) Discrete Output

Connect wiring

Step	Action
1	See Figure 3-7. Open the rear end cap (opposite end from display) by loosening the M3 locking screw and unscrewing the end cap.
2	Open the cable gland (on right side below antenna). (Cable gland must be ordered as an option.)
3	Feed wiring (allowed diameter 6 to 8 mm) from other transmitter through the cable gland and connect to terminal block using either voltage or current but not both. See wiring diagrams pages 23 and 24.
4	Plug battery connector into batteries.
5	Close rear end cap and cable gland.
6	Tighten M3 locking screw on the rear end cap.

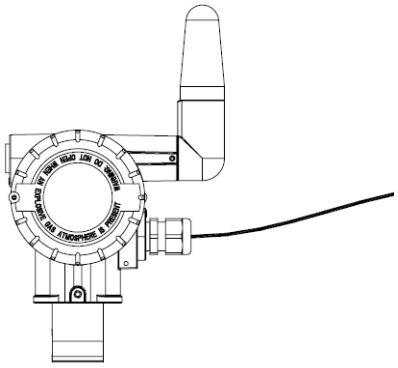
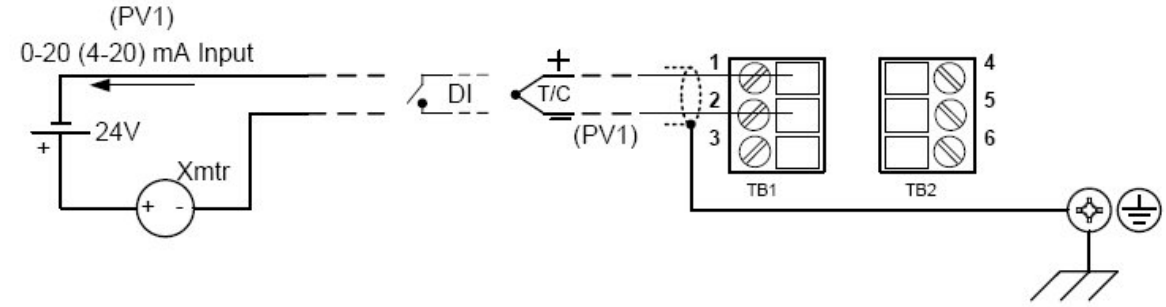


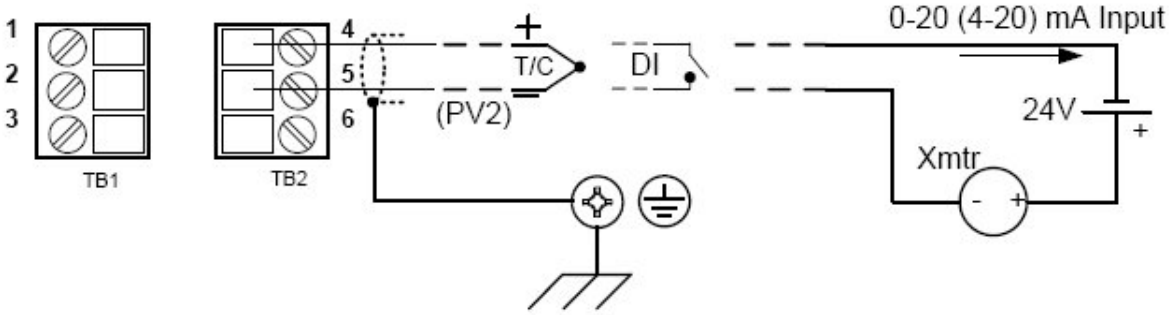
Figure 3-7 Universal I/O Connection

Wiring for calibration – XYR6000 Universal I/O Wiring Diagrams for AI/DI (Model STUW700)

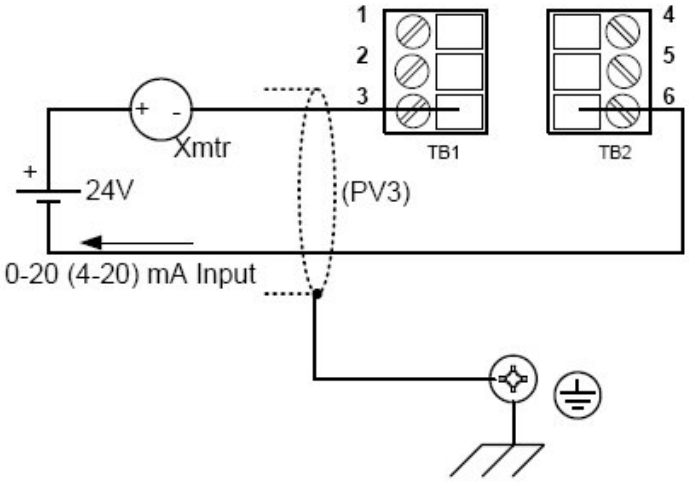
PV1 Possible Connections
T/C, DI or HLAI



PV2 Possible Connections
T/C, DI or HLAI



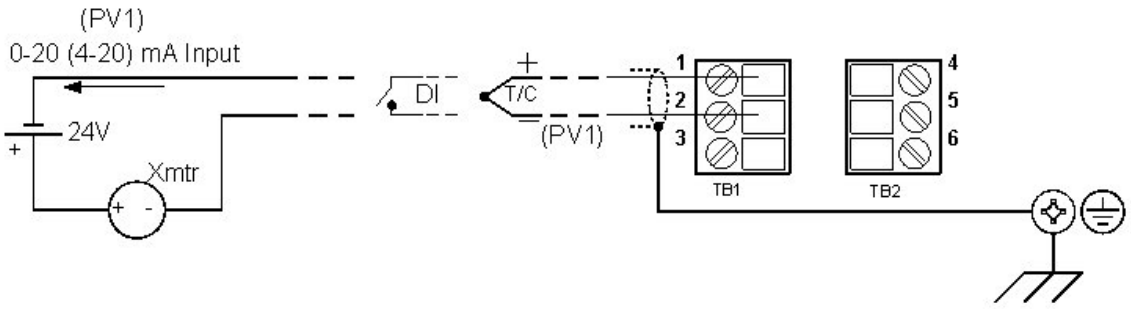
PV3 Possible Connections
(HLAI only)



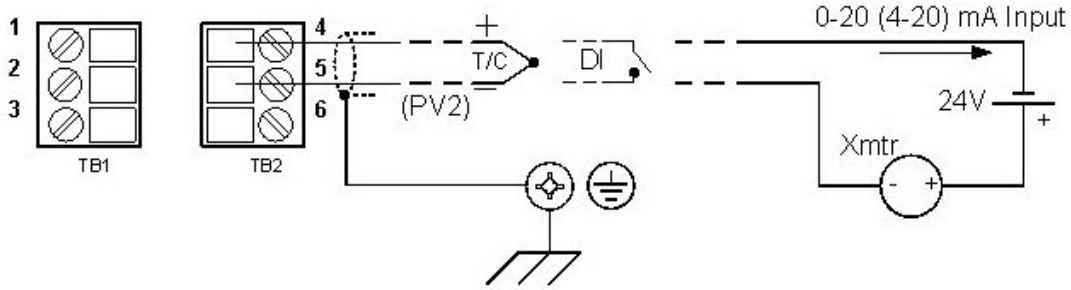
Note: any combination of the above are allowed.
For example: PV1 is a DI, PV2 is 4-20mA, PV3 is 0-20mA.
Or PV1 is 0-20mA, PV2 is a T/C, PV3 is 0-20mA

Wiring for calibration – XYR 6000 Universal I/O Wiring Diagrams for AI/DI/DO (Model STUW701)

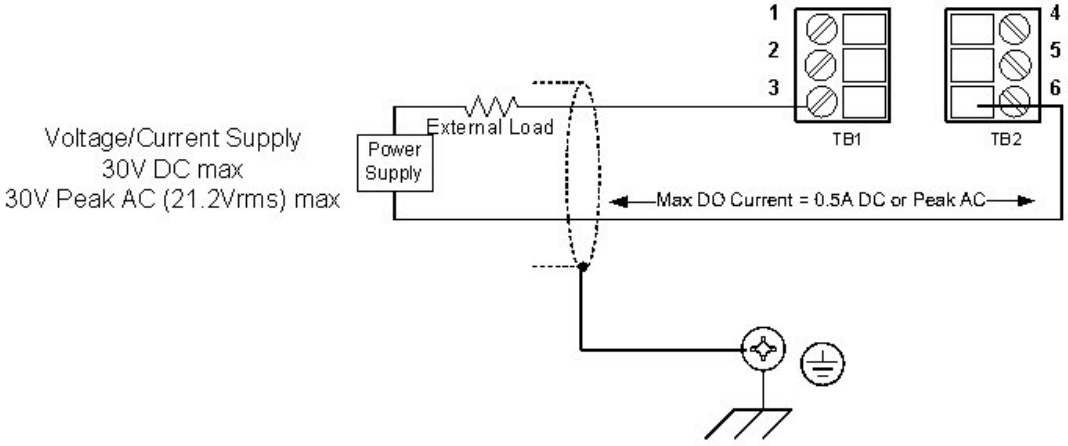
PV1 Possible Connections
T/C, DI or HLAI



PV2 Possible Connections
T/C, DI or HLAI

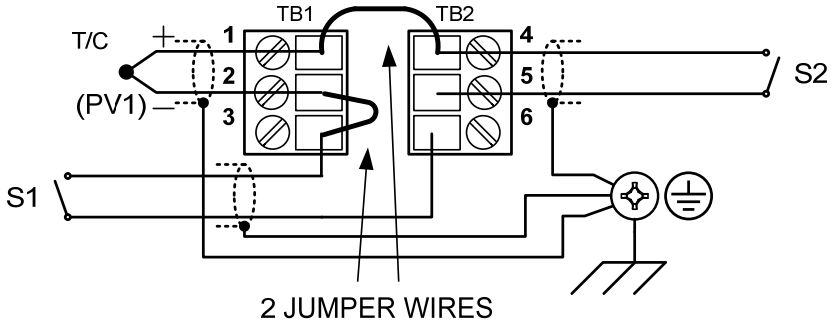


PV3 Possible Connections
(DO only)

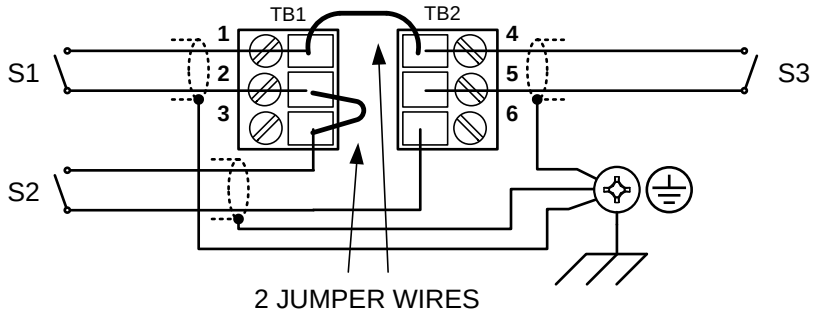


Note: any combination of the above are allowed.
For example: PV1 is a DI, PV2 is 4-20mA, PV3 is DO.
Or PV1 is 4-20mA, PV2 is a T/C, PV3 is DO

STTW 401 T/C AND 2 DI CONNECTION



STTW 500 MULTI-DI CONNECTION



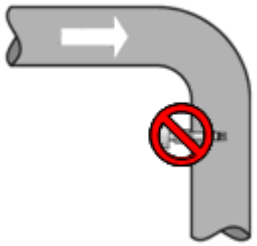
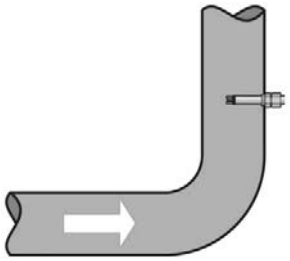
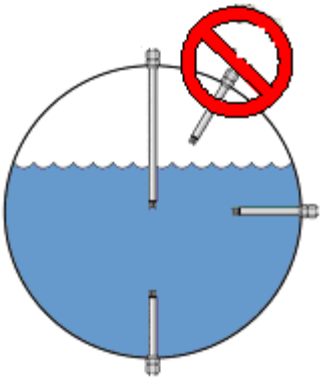
NOTES:

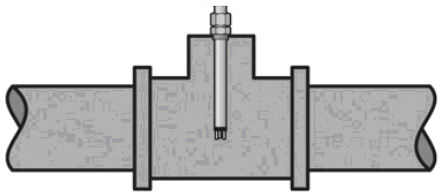
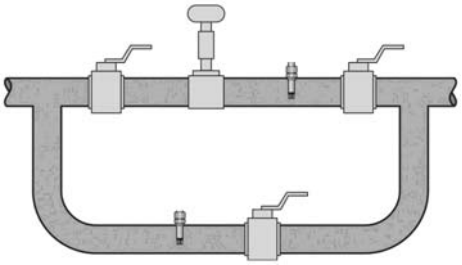
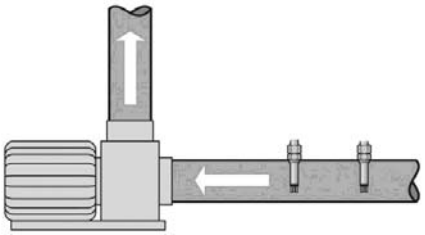
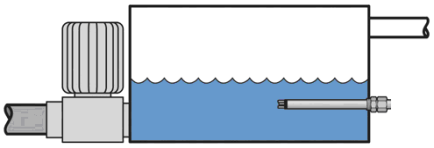
1. Shielded switch input cable is required for EMC conformity and is recommended for all remote switch installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the switch location, the shield shall not be connected at the transmitter end.
2. Jumper wires the same gauge and stranding as the switch wires are required for all switch input combinations.
3. Switches shall be isolated from each other and from earth ground to avoid common mode noise problems.

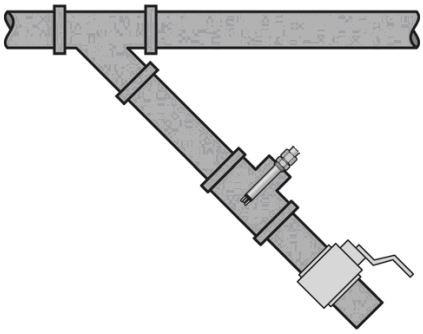
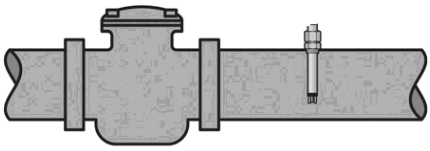
3.5 Corrosion models

Probe mounting locations

The corrosion probe must be installed in a location that is most susceptible to corrosion. In most cases, corrosion tends to occur where water is trapped or stagnant. However, it can also accelerate at the bend of the pipe or where corrosion has occurred previously, but is accelerated by high flow or turbulence.

Location	Picture
Incorrect probe location The probe should not be mounted in a pipe drop since the corrosive liquid may not be in full contact with the electrodes.	
Correct probe location The probe should be mounted in the riser of a pipe near an elbow where the velocity is the highest. In general, probe should be mounted in pipes or tanks at locations of highest liquid velocity and constant immersion.	
Correct Pipeline Position Probe can be located at any point on the pipeline but should always be immersed in the corrosive material.	

Location	Picture
Located in Tee Probe can be located at any point on the pipeline but should always be immersed in the corrosive material.	
Located in Bypass Loop Probe should be located downstream of a control valve for best performance and can also be located in the deadleg portion of a by-pass. Note that the probe located in the by-pass leg should be mounted before the valve for best performance. This guarantees the electrodes will always be immersed in the corrosive material.	
Mounted with Different Electrodes Installing with different electrode materials on the suction side of the pump will ensure monitoring of the pump impeller and the pipe.	
Installed in a Condensate Flash Tank A condensate flash tank is also a good application.	

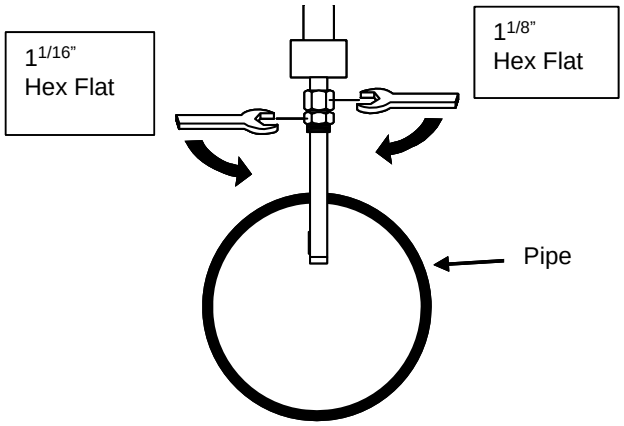
Location	Picture
Mounted in Y-Strainer The probe is shown in the blow down of a Y-strainer.	
Mounted in Basket Strainer The probe is shown in the discharge side of the basket strainer.	

The electrodes should be selected to reflect the same metal properties as the piping or other components that might be susceptible to corrosion. For example, in applications where the pipe is made of stainless steel and the water pump's impeller is made of carbon steel, the impeller will corrode faster than the pipe. In this case it is advisable to select the electrodes to be the same material as the pump's impeller.

Probe installation

WARNING

If the pipe or vessel into which the probe is to be inserted is under pressure and/or contains any hazardous substance, such as steam, caustic solutions, acids, toxins or other substances specified by OSHA as physical or health hazards, the pipe or vessel must first be depressurized and any hazardous substance purged there from, and appropriate lockout/tagout procedures observed in accordance with Section 1910.147 of the OSHA Regulations, before the probe can be installed. Failure to follow these procedures may result in serious injury or death.

Step	Action
1	 Some probes are supplied with an adjustable, compression NPT fitting (e.g. Swagelok). With this fitting, follow this tightening sequence to ensure a tight seal. a) The Swagelok fitting should be held onto place with a plastic zip-tie around the probe body. The zip-tie should be removed. b) Determine the depth that the probe should extend into the pipe. c) Tighten the larger upper nut until the tubing will not rotate freely by hand. d) Make a mark on the nut. This mark will serve as a reference as the 6 o'clock position. e) While holding fitting body steady, tighten the large upper nut 1 + 1⁄4 turns to the 9 o'clock position. f) This tightening sequence will crimp the internal ring onto the probe body and should lock the fitting in place now. g) Tighten the lower nut onto the pipe nipple or access point. For fixed type probes (without the adjustable compression fitting) only the 1 1/16 hex nut needs to be tightened and the safety bracket is not required.
2	Ensure the flow rate of the process fluid does not exceed 20 feet per second (fps). Stronger flow might damage probes with three finger electrodes and interfere with the reading. If the flow rate exceeds the recommendation, a different probe style may be required.

Connect wiring

Step	Action
1	See Figure 3-8. Open the transmitter's rear end cap (opposite end from display).
2	Open the cable gland (on right side below antenna). (Cable gland must be ordered as an option.)
3	Feed probe wiring through the cable gland and connect to terminal block. See Figure 3-8. For terminal connections see info starting on page 47.
4	Plug battery connector into batteries.
5	Close rear end cap and cable gland.

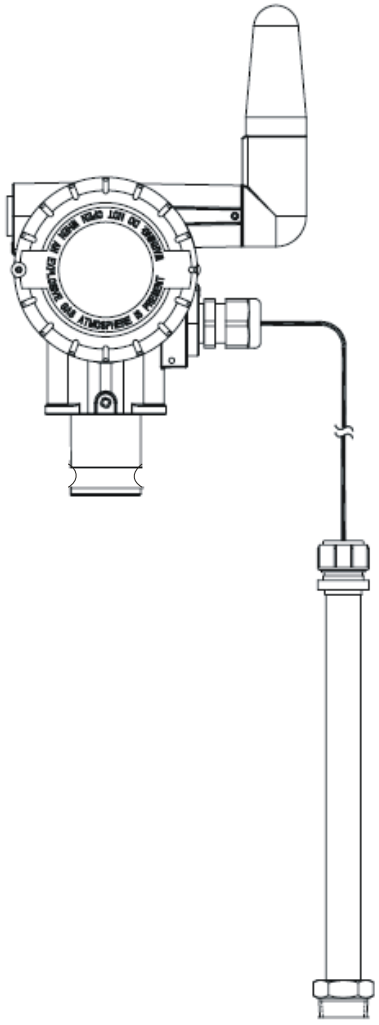


Figure 3-8 Corrosion transmitter with remote probe

4. Antenna adjustment and mounting

4.1 Requirements

Radio installation requirements

ATTENTION

Professional Installation is required to insure conformity with Federal Communications Commission (FCC) in the USA, Industry Canada (IC) in Canada and the Radio and Telecommunications Terminal Equipment Directive, 1999/5/EC (R&TTE), in the European Union (EU).

Professional installation is required for the selection and installation of approved antennas and setup of the maximum allowable radiated power from the XYR 6000 Wireless Transmitter as configured for the particular installation site.

The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm (8 inches) from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For remote antenna, see antenna installation requirements to satisfy FCC RF exposure requirements.

ATTENTION

Federal Communications Commission (FCC):

The XYR 6000 Wireless Transmitters comply with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada (IC):

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF fields in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's web site www.hc-sc.gc.ca/rpb.

4.2 Integral antenna

WARNING

POTENTIAL ELECTROSTATIC CHARGING HAZARD

The integrally mounted antenna shroud is made of Teflon® and has a surface resistance greater than 1Gohm per square. When the XYR 6000 transmitter is installed in potentially hazardous locations care should be taken not to electrostatically charge the surface of the antenna shroud by rubbing the surface with a cloth, or cleaning the surface with a solvent. If electrostatically charged, discharge of the antenna shroud to a person or a tool could possibly ignite a surrounding hazardous atmosphere.

Elbow

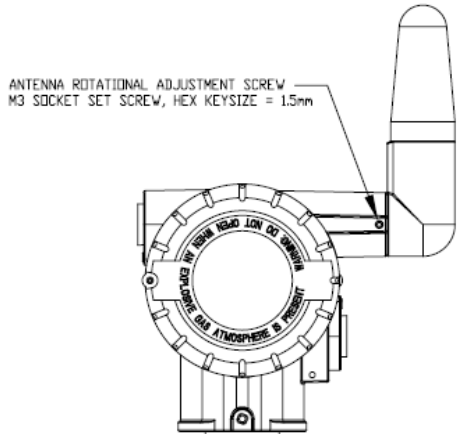


Figure 4-1 Elbow antenna adjustment

(2 dBi Antenna Configuration Shown)

If your model has the integral elbow antenna you can adjust it to improve reception. Typically, pointed straight up gives best performance but your installation may vary. Loosen the 1.5mm set screw located near the antenna base. Rotate antenna for best reception. Do not rotate antenna more than 180 degrees either direction or you could damage internal wiring. Tighten set screw.

Straight

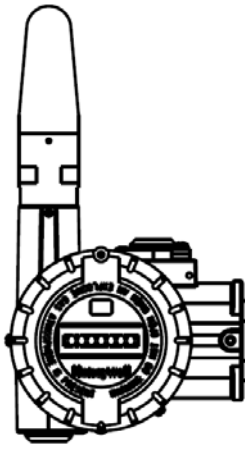


Figure 4-2 Integral straight antenna

(Straight Antenna ONLY available in 2 dBi configuration)

If your model has the integral straight antenna (Figure 4-2) you can adjust its position by rotating the transmitter housing. (See page 15.) Typically, pointed straight up gives best performance but your installation may vary.

4.3 Remote antenna

Outdoor installation warnings

WARNING

LIVES MAY BE AT RISK! Carefully observe these instructions and any special instructions that are included with the equipment you are installing.

WARNING

Contacting power lines can be lethal.

Look over the site before beginning any installation, and anticipate possible hazards, especially these:

Make sure no power lines are anywhere where possible contact can be made. Antennas, masts, towers, guy wires or cables may lean or fall and contact these lines. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines. Make sure there is NO possibility that equipment or personnel can come in contact directly or indirectly with power lines.

Assume all overhead lines are power lines.

The horizontal distance from a tower, mast or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls either during installation or later.

WARNING

To avoid falling, use safe procedures when working at heights above ground.

Select equipment locations that will allow safe, simple equipment installation.

Don’t work alone. A friend or co-worker can save your life if an accident happens.

Use approved non-conducting ladders and other safety equipment. Make sure all equipment is in good repair.

If a tower or mast begins falling, don’t attempt to catch it. Stand back and let it fall.

If anything such as a wire or mast does come in contact with a power line, DON’T TOUCH IT OR ATTEMPT TO MOVE IT. Instead, save your life by calling the power company.

Don’t attempt to erect antennas or towers on windy days.

WARNING

MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS. This will help prevent fire damage or human injury in case of lightning, static build-up, or short circuit within equipment connected to the antenna.

The base of the antenna mast or tower must be connected directly to the building protective ground or to one or more approved grounding rods, using 1 OAWG ground wire and corrosion-resistant connectors.

Refer to the National Electrical Code for grounding details.

Lightning arrestors for antenna feed coaxial cables are available from HyperLink Technologies, Inc.

WARNING

If a person comes in contact with electrical power, and cannot move:

DON'T TOUCH THAT PERSON, OR YOU MAY BE ELECTROCUTED.

Use a non-conductive dry board, stick or rope to push or drag them so they no longer are in contact with electrical power.

Once they are no longer contacting electrical power, administer CPR if you are certified, and make sure that emergency medical aid has been requested.

Choosing a Mounting Location

The location of the antenna is important. Objects such as metal columns, walls, etc. will reduce efficiency. Best performance is achieved when antennas for both Multinodes and XYR 6000 Transmitters (Leaf Nodes) are mounted at the same height and in a direct line of sight with no obstructions. If this is not possible and reception is poor, you should try different mounting positions to optimize reception.

Antennas should be mounted clear of any obstructions to the sides of the radiating element. If the mounting location for an omnidirectional antenna is on the side of a building or tower, then the antenna pattern will be degraded on the building or tower side.

Site Selection

Before attempting to install your antenna, think where you can best place the antenna for safety and performance.

Follow these steps to determine a safe distance from wires, power lines, and trees.

Step	Action
1	Measure the height of your antenna.
2	Add this length to the length of your tower or mast and then double this total for the minimum recommended safe distance.

CAUTION

If you are unable to maintain this safe distance, stop and get professional help.

Generally speaking, the higher your antenna is above the ground, the better it performs. Good practice is to install your antenna about 5 to 10 feet (1.5 to 3 meters) above the roof line and away from all power lines and obstructions. If possible, find a mounting place directly above your wireless device so that the lead-in cable can be as direct as possible.

Mounting the Antenna

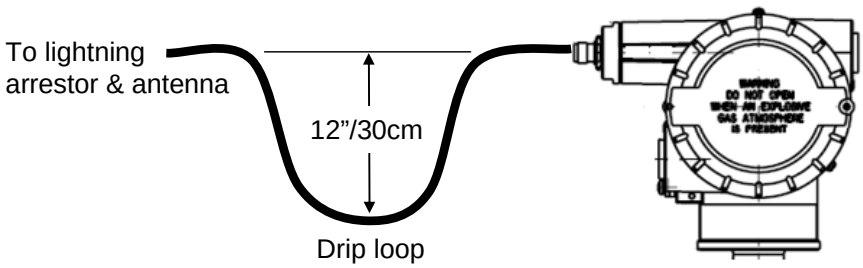
Antennas are provided with a mast mounting kit consisting of a mounting bracket and two U-bolt clamps. This kit allows you to mount the antenna to masts with outside diameters (O.D.) from 1.25 inches (3.2 centimeters) to 2 inches (5.1 centimeters). Honeywell recommends that a 1.5 inch (3.8 centimeter) or larger tubing mast be used.

Omnidirectional antennas are vertically polarized. It is very important to mount the antenna in a vertical (not leaning) position for optimal performance.

Follow these steps to mount the antenna on a mast.

Step	Action
1	Assemble your new antenna on the ground at the installation site. See the instructions on the following pages for your type of antenna.
2	Attach the antenna to the mast and connect its coaxial cable while you are on the ground, using the mounting kit provided with the antenna. Tighten cables by hand only; do not use tools or you could overtighten. After the cable is attached to the antenna, make sure that the connections are sealed (if outdoors) the prevent moisture and other weathering elements from effecting performance. Honeywell recommends using a weathering tape (such as Coax-Seal®) for outdoor connections. Silicon sealant or electrical tape is not recommended for sealing out door connections.
3	Using tie-wraps (cable ties), secure the coax cable to the mast, using a tie-wrap every ten to twelve inches (25 to 30 cm).
4	Follow standard strain relief practice when installing the antenna cable. Avoid excessive strain, bending, kinks, or crushing (stepping on or placing any weight on cable) before, during or after the coax cable is secured in its final position.
5	Make sure the mast does not fall the "wrong way" should you lose control as you raise or take down the mast. Use a durable non-conductive rope. Have an assistant tend to the rope; ready to pull the mast clear of any hazards (such as power lines) should it begin to fall.
6	If the installation will use guy wires: • Install guy anchor bolts. • Estimate the length of guy wire and cut it before raising the mast. • Attach guy wires to a mast using guy rings.
7	Carefully connect the antenna and mast assembly to its mounting bracket and tighten the clamp bolts. In the case of a guyed installation, you must have at least one assistant to hold the mast upright while the guy wires are attached and tightened to the anchor bolts.
8	Attach the provided self-adhering "DANGER" label at eye level on the mast.
9	Install ground rods to remove any static electricity buildup and connect a ground wire to the mast and ground rod. Use ground rods designed for that purpose; do not use a spare piece of pipe.

Step	Action
10	When attaching the coax cable to the XYR 6000, it is recommended that a drip loop with a radius of at least 12 inches (30 cm) be formed close to the XYR 6000. This will minimize ice and water buildup on the transmitter itself. Tighten cables by hand only; do not use tools or you could overtighten.



Directional mounting procedure

Step	Action
1	Secure mast mounting bracket to mast as shown using 2 U-bolts and supplied hardware.
2	Attach antenna to mast mounting bracket as shown using supplied hardware.
3	Adjust antenna to desired tilt and lock into place using the antenna tilt adjustment nut.

Figure 4-3 Directional antenna mounting

Omnidirectional mounting procedure

Step	Action
1	Secure mast mounting bracket to mast as shown using 2 U-bolts and supplied hardware.
2	Remove antenna mounting bolt and washer from antenna base.
3	Insert antenna into mounting bracket and secure with washer and antenna mounting bolt. Do not overtighten.
4	Any drain holes in the antenna base must be kept clear for proper operation.

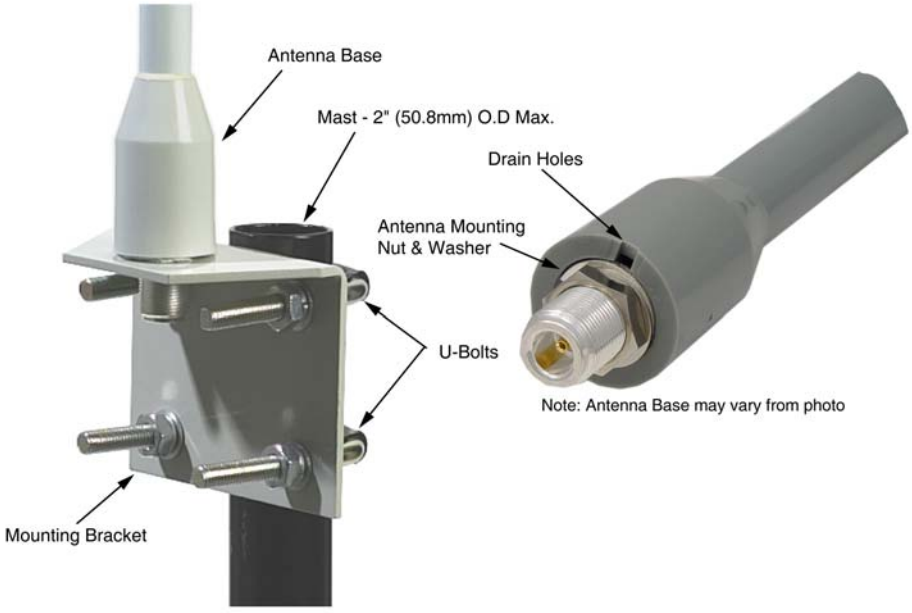
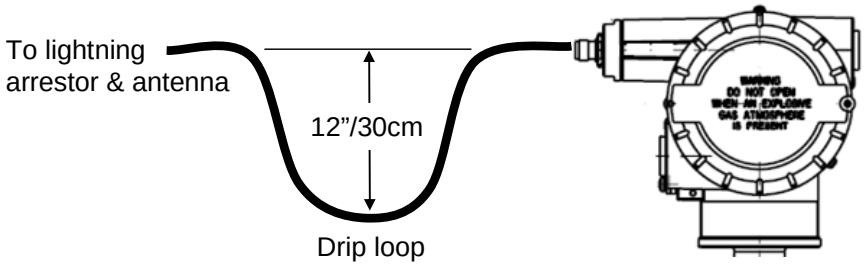


Figure 4-4 Omnidirection antenna mounting

Grounding the antenna

Follow these guidelines to ground the antenna in accordance with national electrical code instructions.

Step	Action
1	Use No. 10 AWG copper or No. 8 or larger copper-clad steel or bronze wire as ground wires for both mast and lead-in. Securely clamp the wire to the bottom of the mast.
2	Secure the lead-in wire to a lightning arrestor and mast ground wire to the building with stand-off insulators spaced from 4 feet (1.2 meters) to 8 feet (1.8 meters) apart.

Step	Action
3	Using coaxial cable, connect the antenna base to the transmitter's remote antenna connector (located at top right as you face the transmitter display). Antenna cable shield is bonded to earth ground via either the transmitter earth ground connection and/or by the lightning arrestor earth ground connection. The lightning arrestor must be bonded to earth ground in order to function properly. Tighten cables by hand only; do not use tools or you could overtighten. See pages 57, 68, 79 and 90 for cable types and connection information.
4	If the coax cable is to enter a building, then the lightning arrestor should be mounted as close as possible to where the lead-in wire enters the building. The lightning arrestor sold by Honeywell features a bulkhead N-Female connector with a rubber "O"-ring seal which can be used for mounting through an enclosure wall. The lightning arrestor can also be mounted using the included stainless steel mounting bracket. Both connector ports of the lightning arrestor provide equal protection no matter which way it is installed. Either port can face the antenna and either port can face the Transmitter.
5	Drill a hole in the building's wall as close as possible to the equipment to which you will connect the lead-in cable. **CAUTION** There may be wires in the wall. Before drilling check that the area is clear of any obstructions or other hazards.
6	Pull the cable through the hole and form a drip loop on the outside close to where the cable enters the building. The drip loop should have a radius of at least 12 inches (30 cm). 
7	Thoroughly waterproof the lead-in area.
8	Connect the lead-in cable to the XYR 6000 Transmitter. Tighten cables by hand only; do not use tools or you could overtighten.

5. Start up

5.1 Battery Power Option

Connect batteries

WARNING

- Risk of death or serious injury from explosion or fire.
- If IS Battery Pack, Honeywell 50047517-501, has been installed in the Wireless Transmitter, the transmitter enclosure maybe opened when an explosive gas atmosphere is present. Otherwise, do not open transmitter enclosure when and explosive gas atmosphere is present.

  - When not in use the Battery Pack must be stored in a non Hazardous Area
- Do not change batteries in an explosive gas atmosphere.
- The batteries used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100°C (212°F), or incinerate.
- When installing batteries, do not snag the battery terminal on the clip or the battery may be damaged. Do not apply excessive force.
- Do not drop. Dropping the battery may cause damage. If a battery is dropped, do not install the dropped battery into the transmitter. Dispose of dropped battery promptly per local regulations or per the battery manufacturer's recommendations.

ATTENTION

Both batteries must be the same model from the same manufacturer. Mixing old and new batteries or different manufacturers is not permitted.

Use only the following 3.6V lithium thionyl chloride (Li-SOCl2) batteries (non-rechargeable), size D. No other batteries are approved for use in XYR 6000 Wireless Transmitters.

- Xeno Energy XL-205F
- Eagle Picher PT-2300H
- Tadiran TL-5930/s
- Honeywell p/n 50026010-501 (Two 3.6V lithium thionyl chloride batteries)
- Honeywell p/n 50026010-502 (Four 3.6V lithium thionyl chloride batteries)
- Honeywell p/n 50026010-503 (Ten 3.6V lithium thionyl chloride batteries)

These instructions are divided into two procedures for:

- IS Battery Holder, 50025288-502
- IS Battery Pack, 50047517-501

Tools required

- #1 Phillips Screwdriver or 1/8” Slotted Screwdriver
- Torque Screwdriver
- 1.5 mm hex key

Procedure

It is the User/Installer’s responsibility to install the XYR 6000 Wireless Transmitters in accordance with national and local code requirements.

IS Battery Holder, 50025288-502

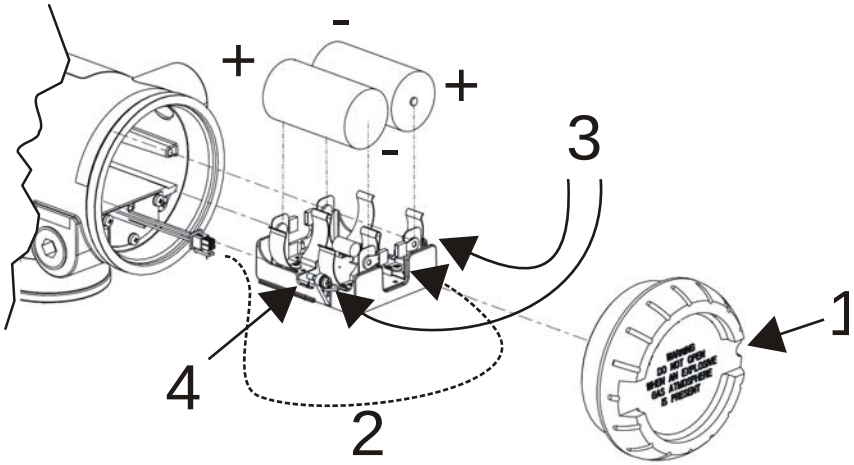


Figure 5-1: Battery assembly

Table 5-1: Battery replacement procedure

Step	Action
	ATTENTION You must replace both batteries. Both batteries must be the same model from the same manufacturer. Mixing old and new batteries or different manufacturers is not permitted. Use only the following 3.6V lithium thionyl chloride (Li-SOCl2) batteries (non-rechargeable), size D. No other batteries are approved for use in XYR 6000 Wireless Transmitters. • Xeno Energy XL-205F • Eagle Picher PT-2300H • Tadiran TL-5930/s • Honeywell p/n 50026010-001 (Two 3.6V lithium thionyl chloride batteries) (1 transmitter) • Honeywell p/n 50026010-002 (Four 3.6V lithium thionyl chloride batteries) (2 transmitters) • Honeywell p/n 50026010-003 (Ten 3.6V lithium thionyl chloride batteries) (5 transmitters)
1	Loosen the M3 locking set screw on the battery end-cap (opposite end from display). See item 1 in Figure 5-1. Unscrew and remove the end cap.
2	Using thumb and forefinger, squeeze the battery connector at top and bottom to disengage the locking mechanism, then pull to disconnect. See item 2 in Figure 5-1.
3	Loosen the two battery holder retaining screws (closest to the batteries). See item 3 in Figure 5-1. The screws are captive.
4	Pull the battery holder out of the transmitter.
5	Remove the old batteries from the battery holder. If needed, pry out the batteries by using a slotted screwdriver as a lever in the holder's side slots. See item 4 in Figure 5-1.
6	Install batteries as follows to avoid snagging the battery terminal on the clip and damaging the battery. Align the new battery with the clips and angle the positive end of the battery into the positive battery terminal clip. Using a thumb and forefinger pull the negative terminal clip outward and push down on the battery until fully seated in the clips. Do not apply excessive force when pushing battery down. Repeat this process for the second battery.
7	Insert the battery holder into the transmitter. Reattach the screws and tighten to 0.4 – 0.6 N-M (3.5 – 5.3 Lb-in). Re-connect battery connector. Honeywell recommends lubricating the end cap O-ring with a Silicone Grease such as Dow Corning #55 or equivalent before replacing the end cap.
8	Screw the end cap back on and tighten the M3 locking screw.
9	Dispose of used battery promptly per local regulations or the battery manufacturer's recommendations. Keep away from children. Do not disassemble and do not dispose of in fire.

IS Battery Pack, 50047517-501

Table 5-2: IS Battery Pack replacement procedure

Step	Action
1	Follow steps 1-4, as above
2	**WARNING** **DO NOT ASSEMBLE WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT**

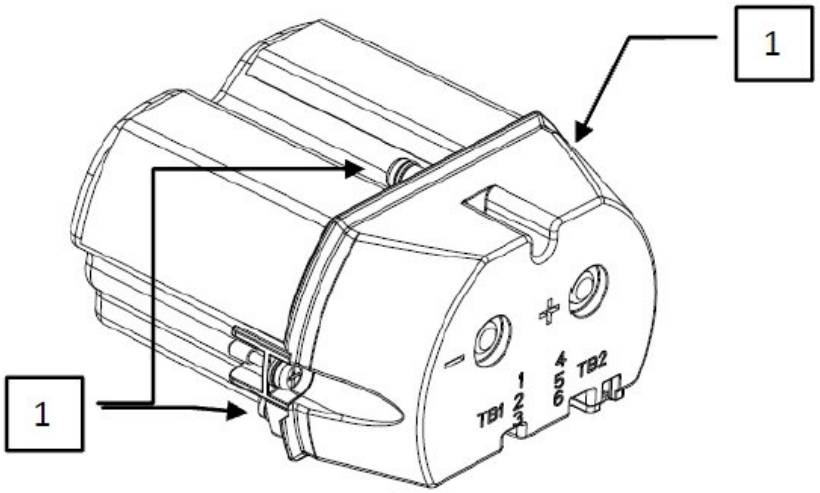


Figure 5-2: IS Battery Pack

3	Remove top of battery pack by using a #1 Philips or 1/8” slotted screwdriver for the screws identified as #1 in Figure 5-2.
4	Remove the old batteries and dispose of them promptly according to local regulations of the battery manufacturer’s recommendations.
5	Install the batteries following the polarity as noted on the lid
6	Re-install top of the battery pack and tighten screws
7	Insert the Battery pack into the transmitter. Reattach the screws as indicated in Figure 5-1, item 3, to 0.4 to 0.6 N-M (3.5 – 5.3 Lb-in). Reconnect the Batter Pack connector Honeywell recommends lubricating the end cap with a silicone grease such as Dow Corning #55 or equivalent before replacing the end cap
8	Screw the cap back on and tighten the M3 locking screw

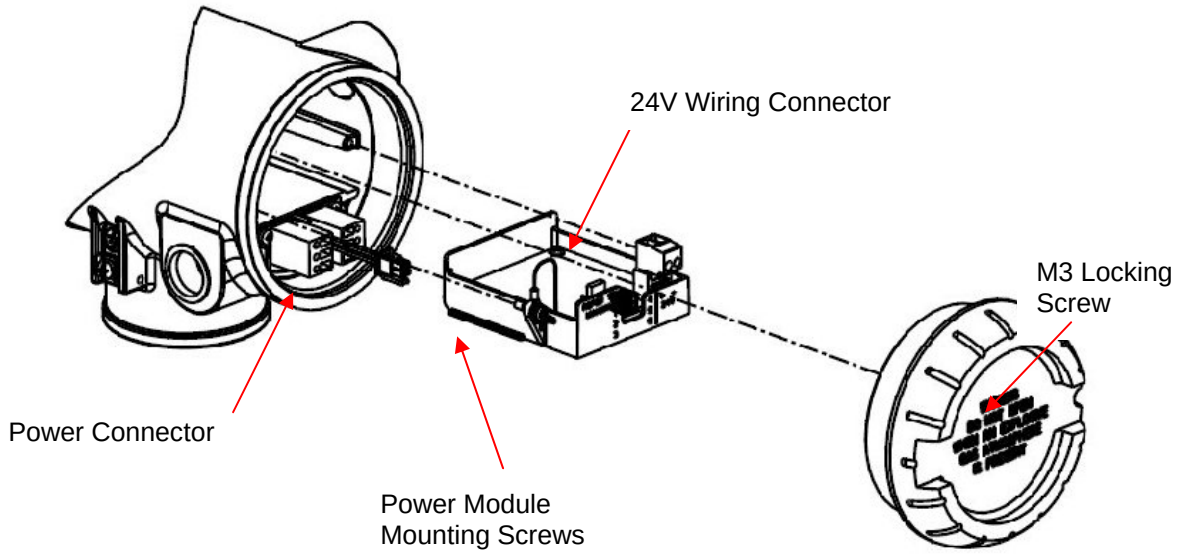


Figure 5-3 Power Option 24V

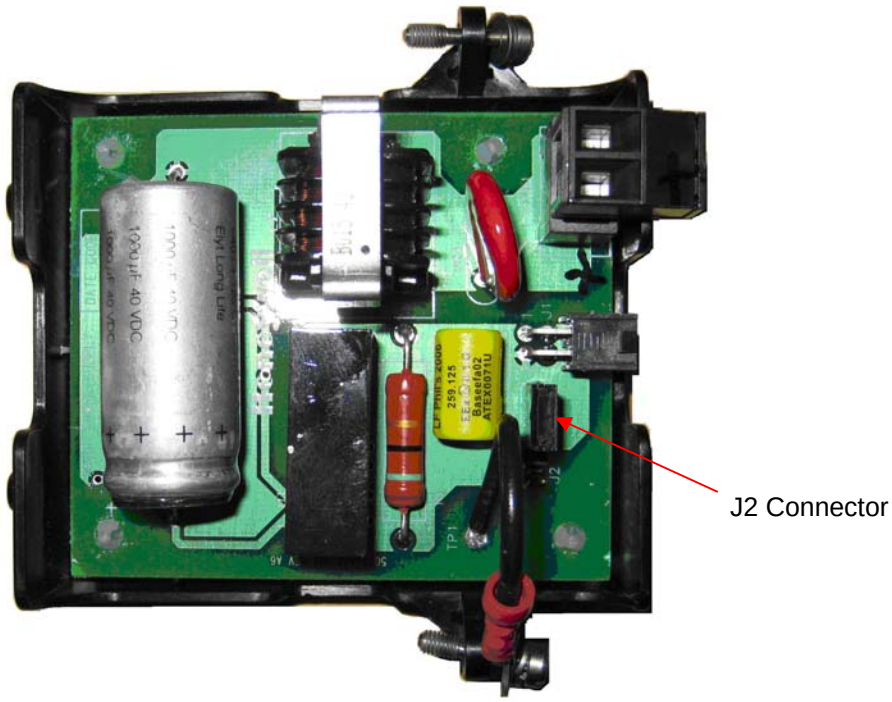


Figure 5-4 External 24V Power Module

24 Vdc Power Supply Option (DC) System Diagram

(Ordinary Non-Hazardous Locations)

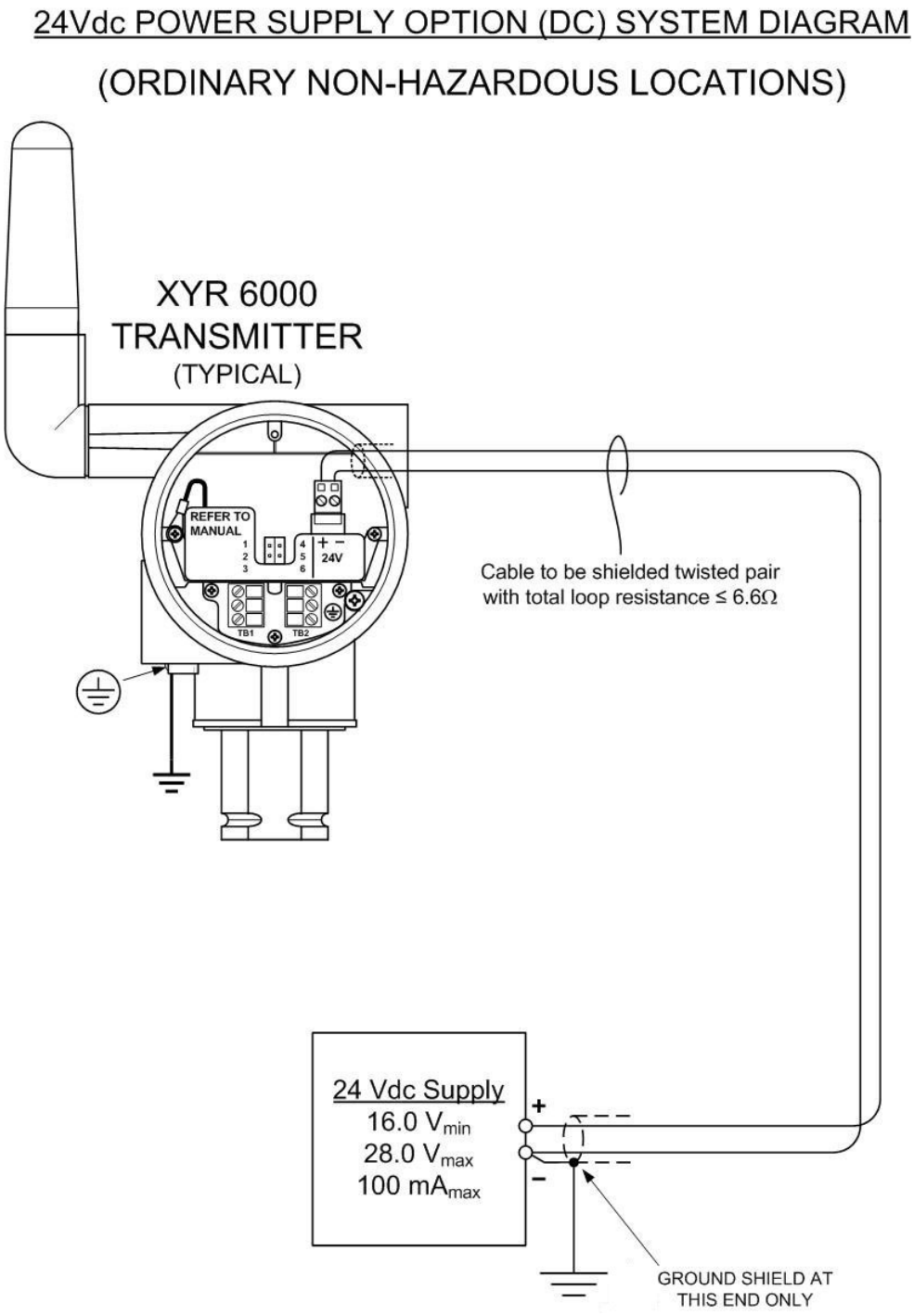


Figure 5-5 Power Supply 24 Vdc Option (DC) System Diagram

5.2 Display sequence

After power up, the transmitter does a brief self-test of the LCD display. Then it proceeds to Power-On Message, which is the model name of the transmitter. The name is displayed for 2 seconds after which the transmitter displays the process variables and associated status.

5.3 Provisioning

Before the transmitter can be configured it must be unlocked with a security key so it can join the network. Use the Provisioning Device Pocket PC software to receive security keys from the Key Server manager, then aim the Pocket PC at the transmitter and transmit a key.

See Getting Started with Honeywell OneWireless Solutions for more information.

6. Certification Installation Requirements

6.1 Certification Drawings

Use the following drawings and accompanying notes and text for hazardous locations. Any deviation from the installation requirements could void the certification. For non-hazardous locations you can use the same drawings without the accompanying notes and text.

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PRE REL		
ISS	REVISION & DATE	APPD
E	09/24/10 ECO-0069377	VM

XYR 6000 WIRELESS TRANSMITTERS
CSA CERTIFIED & FM APPROVED DIVISION 2 / ZONE 2 INSTALLATION DRAWING

NOTES:

1. Division 2 / Zone 2 installation shall be in accordance with the Canadian Electrical Code (CEC), part I, Section 18 for Canada, ANSI/NFPA 70, NEC® Articles 501-4(b) or 505-15(c) for the USA and ANSI/ISA 12.12.01.
2. System Parameters:
   XYR 6000 and Field Transmitter Vmax ≥ Voc or Uo, Imax ≥ Isc or Io;
   XYR 6000 Ci + Field Transmitter Ci + Ccable ≤ Control Apparatus Ca,
   XYR 6000 Li + Field Transmitter Li + Lcable ≤ Control Apparatus La.
3. When the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 197pF/m (60 pF/ft), Inductance – 0.66μH/m (0.020 μH/ft).
4. For Class II and Class III installations and Type 4X / IP66 applications where rigid metal conduit is not used, seal all cable and unused entries against dust and fibers using a NRTL listed cable gland or seal fitting.
5. Transmitters shall have the enclosure bonded to ground in accordance with CEC part I, Section 18-074, Bonding in hazardous locations, and Rule 10-814.
6. Shielded two-wire cable is required for EMC conformity and is recommended for all installations. The 4-20 mA loop shield shall be grounded at the supply end ONLY.
7. Division 2: WARNING: EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
8. NO REVISION OF THIS INSTALLATION DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM CSA AND FM APPROVALS.
9. For release approvals see ECO # 0031900.

CERTIFICATION DOCUMENT ENGINEERING CHANGE ORDERS (ECOs) MUST BE AUTHORIZED BY APPROVALS ENGINEERING	DRAWN	WF	
	CHECKED		
	DEV ENG	NOTE 9	
	MFG ENG		
	QA ENG		
MASTER FILE TYPE: MS WORD	TOLERANCE UNLESS NOTED ANGULAR DIMENSION		

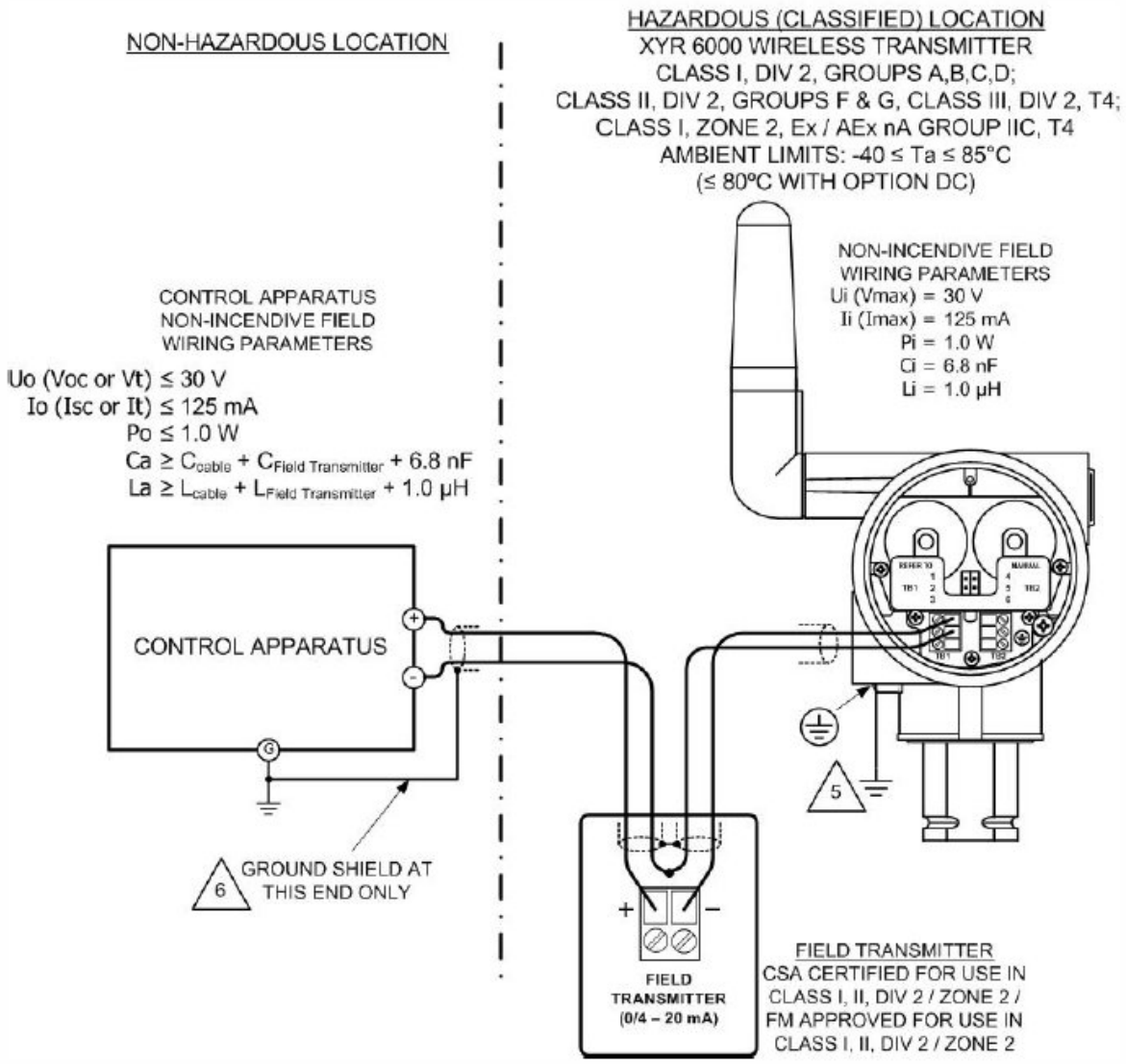
Honeywell

CSA Installation Drawing
XYR 6000 Wireless Transmitters
Division 2 / Zone 2

A A4	50026071	
SCALE	USED ON	SH.1 OF 10

CSA CERTIFIED DIVISION 2 / ZONE 2
INSTALLATION DRAWING – TWO-WIRE CONFIGURATION

XYR 6000, STIW600, 0–20 mA / 4–20 mA HIGH LEVEL INPUT INTERFACE



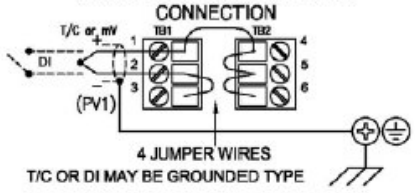
Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 2 of 10

WIRELESS TEMPERATURE AND DIGITAL INPUT (DI) TRANSMITTERS
STTW400, STTW401, STXW500, STT820, STTW830 & STTW840

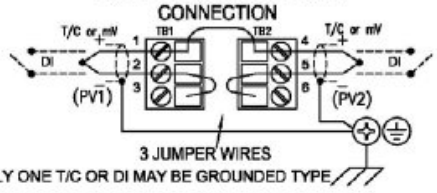
HAZARDOUS (CLASSIFIED)LOCATION

CLASS I, DIV 2, GROUPS A, B, C, D; CLASS II DIV 2, GROUPS F & G, CLASS III, DIV 2, T4;
CLASS I, ZONE 2 Ex/AEx nA GROUP II, T4;
AMBIENT LIMITS: –40 < Ta < 85°C (< 80ºC WITH OPTION DC)

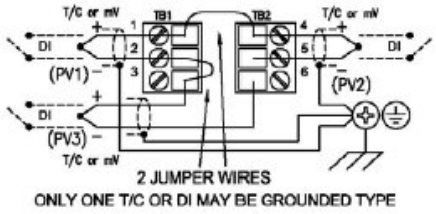
SINGLE THERMOCOUPLE OR DI CONNECTION



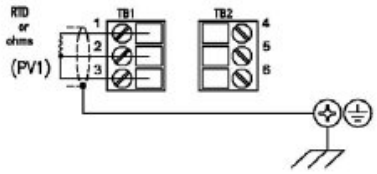
TWO THERMOCOUPLE OR DI CONNECTION



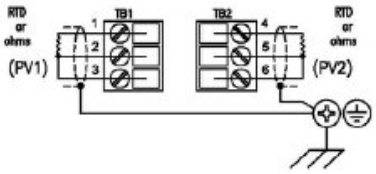
THREE THERMOCOUPLE OR DI CONNECTION



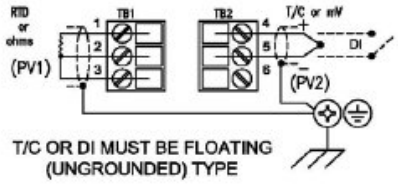
SINGLE THREE-WIRE RTD



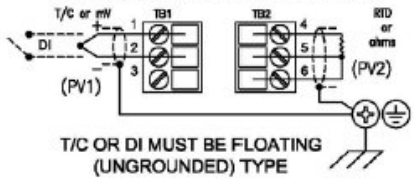
TWO THREE-WIRE RTD's



SINGLE THREE-WIRE RTD & T/C OR DI



T/C OR DI & SINGLE THREE-WIRE RTD



IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:

1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

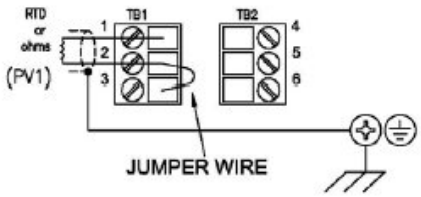
Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 3 of 10

WIRELESS TEMPERATURE AND DIGITAL INPUT (DI) TRANSMITTERS
STTW400, STTW401, STXW500, STTW820, STTW830 & STTW840

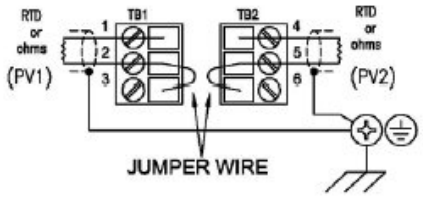
HAZARDOUS (CLASSIFIED)LOCATION

CLASS I, DIV 1, GROUPS A, B, C, D; CLASS II DIV 1, GROUPS E, F & G, CLASS III, DIV 1, T4;
CLASS I, ZONE 0 Ex/AEx ia GROUP IIC, T4;
AMBIENT LIMITS: –40 < Ta < 85°C (< 80ºC WITH OPTION DC)

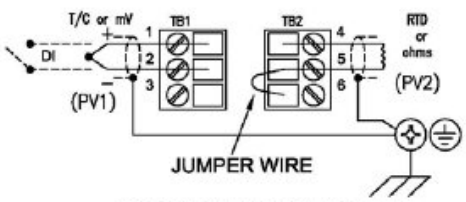
SINGLE TWO-WIRE RTD



TWO TWO-WIRE RTD

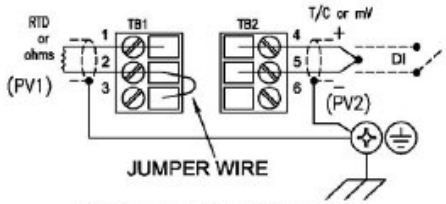


T/C OR DI & SINGLE TWO-WIRE RTD



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

SINGLE TWO-WIRE RTD & T/C OR DI



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:

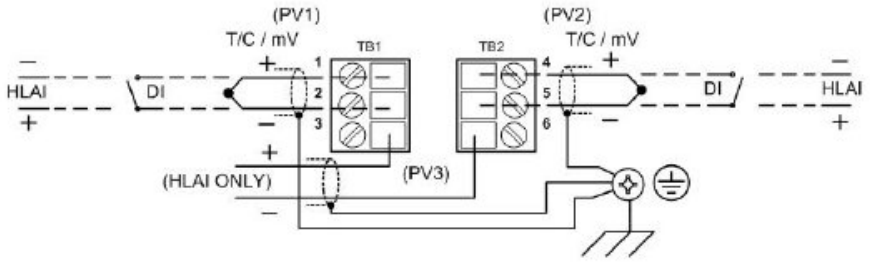
1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 4 of 10

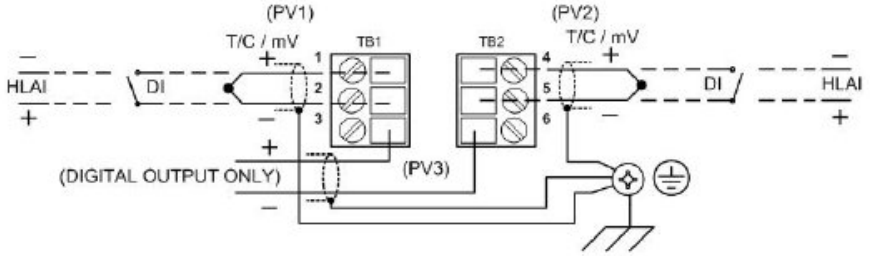
WIRELESS UNIVERSAL I/O - STUW700 & STUW701

HAZARDOUS (CLASSIFIED) LOCATION
CLASS I, DIV 2, GROUPS A,B,C,D; CLASS II, DIV 2, GROUPS F & G, CLASS III, DIV 2, T4;
CLASS I, ZONE 2, Ex / AEx nA GROUP IIC, T4; AMBIENT LIMITS: -40 ≤ Ta ≤ 85°C
(≤ 80°C WITH OPTION DC)

STUW700 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI) AND HIGH LEVEL ANALOG INPUT (HLAI)



STUW701 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI), HIGH LEVEL ANALOG INPUT (HLAI) AND DIGITAL OUTPUT (DO)



HIGH LEVEL ANALOG INPUT NON-INCENDIVE FIELD WIRING & DIGITAL OUTPUT NON-INCENDIVE FIELD CIRCUIT PARAMETERS

Ui (Vmax) = 30 V
Ii (Imax) = 125 mA
Pi = 1.0 W
Ci = 6.8 nF
Li = 0.1 µH

DIGITAL INPUT AND T/C NON-INCENDIVE FIELD WIRING PARAMETERS

Ca = 2.7 µF ≥ C_{Cable}
La = 100 mH ≥ L_{Cable}

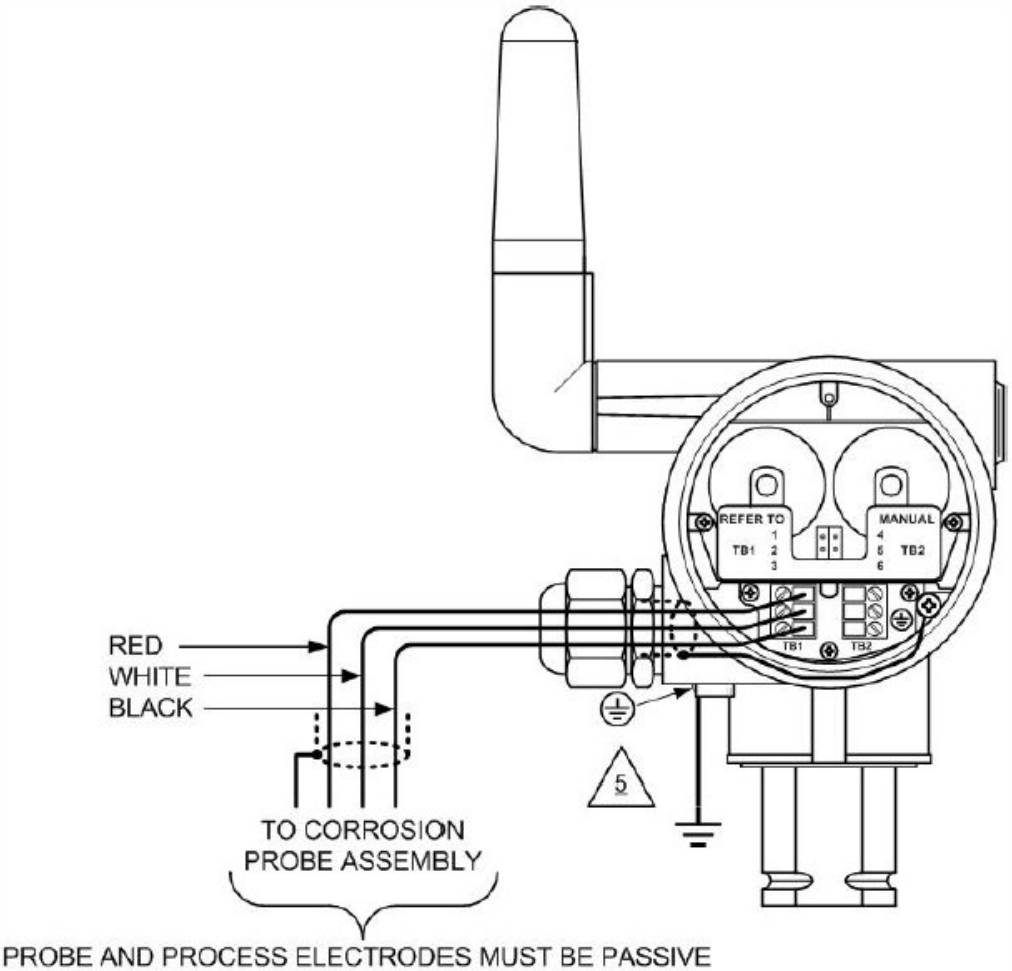
NOTES:

1. Shielded HLAI, DI, DO, thermocouple, mV, or switch input cable is required for EMC conformity and is recommended for all installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the switch, remote HLAI transmitter location, or remote DO supply the shield shall not be connected at the Wireless transmitter end.

Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 5 of 10

XYR 6000, MODEL CETW6000M-W WIRELESS CORROSION TRANSMITTER AND CETW6000M-D SmartCET CORROSION DATA LOGGER

HAZARDOUS (CLASSIFIED) LOCATION
CLASS I, DIV 2, GROUPS A,B,C,D; CLASS II, GROUPS F&G, CLASS III, DIV 2, T4;
CLASS I, ZONE 2, Ex / AEx nA GROUP IIC, T4; AMBIENT LIMITS: -30 ≤ Ta ≤ 85°C
(≤80°C WITH OPTION DC)



PROBE AND PROCESS ELECTRODES MUST BE PASSIVE ELEMENTS ONLY. PROBE AND CABLE PARAMETERS MUST NOT EXCEED 100 µF ≥ C_{PROBE} + C_{CABLE} AND 100 mH ≥ L_{PROBE} + L_{CABLE}

NOTE: Probes used with the Corrosion Transmitter must be acceptable to the authority having jurisdiction with respect to pressure and temperature rating.

Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 6 of 10

The following models may be supplied with internal battery power, or externally supplied 24Vdc only when connected per the following system diagram.

NOTE: XYR 6000 ambient limits with 24V Power Supply are –40°C to +80°C.

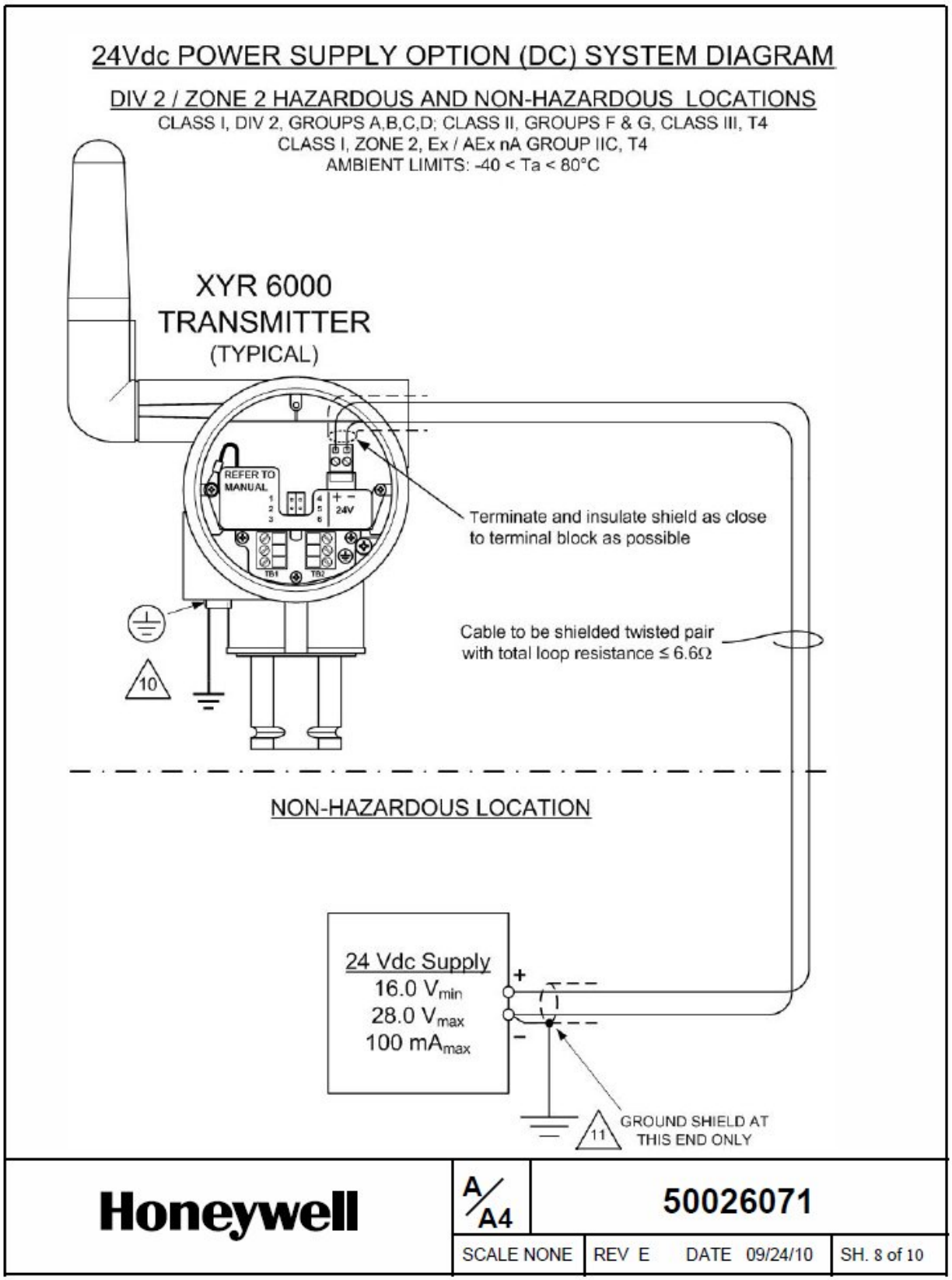
Model	Description	
STGW944	Series 900 Wireless Transmitter, Dual Head Gage Pressure (GP)	0-500 psi / 0-35 bar
STGW974		0-3000 psi / 0-210 bar
STDW924	Series 900 Wireless Transmitter, Differential Pressure (DP)	0-400" H_2O / 0-1000 mbar
STDW930		0-100 psi / 0-7 bar
STDW974		0-3000 psi / 0-210 bar
STGW94L	Series 900 Wireless Transmitter, In-Line Gage & Absolute Pressure	0-500 psi / 0-35 bar
STGW97L		0-3000 psi / 0-210 bar
STGW98L		0-6000 psi / 0-415 bar
STGW99L		0-10,000 psig / 0-690 bar
STAW94L		0-500 psi / 0-35 barA
STTW400	Wireless Temperature Transmitter	Transmitter Only with Remote Sensors: 3 T/C's, or 2 RTD's
STTW401	Wireless Temperature and Digital Input Transmitter	Transmitter Only with Remote Sensors: 1 T/C AND 2 Digital Inputs
STXW500	Wireless Digital Input Transmitter	Three DI (Switch) Inputs
STUW700	Wireless Universal I/O Interface	Three Inputs: 4-20 mA Analog, T/C's, or DI (Switch)
STUW701	Wireless Universal I/O Interface	Two Inputs: 4-20 mA Analog, T/C or DI and One Digital Output (Solid State)
STTW820 STTW830 STTW840	Wireless Temperature Transmitter	Transmitter Integrally Mounted to Thermowell or Probe Assembly
STIW600	Wireless High Level Input Interface	4-20 mA Analog Input
CETW6000M-W	SmartCET Wireless Transmitter, Corrosion Monitoring	Millivolt Input from Remote Mounted Corrosion Probe
CETW6000M-D	SmartCET Corrosion Data Logger	Millivolt Input from Remote Mounted Corrosion Probe, Data via IrDA Port *

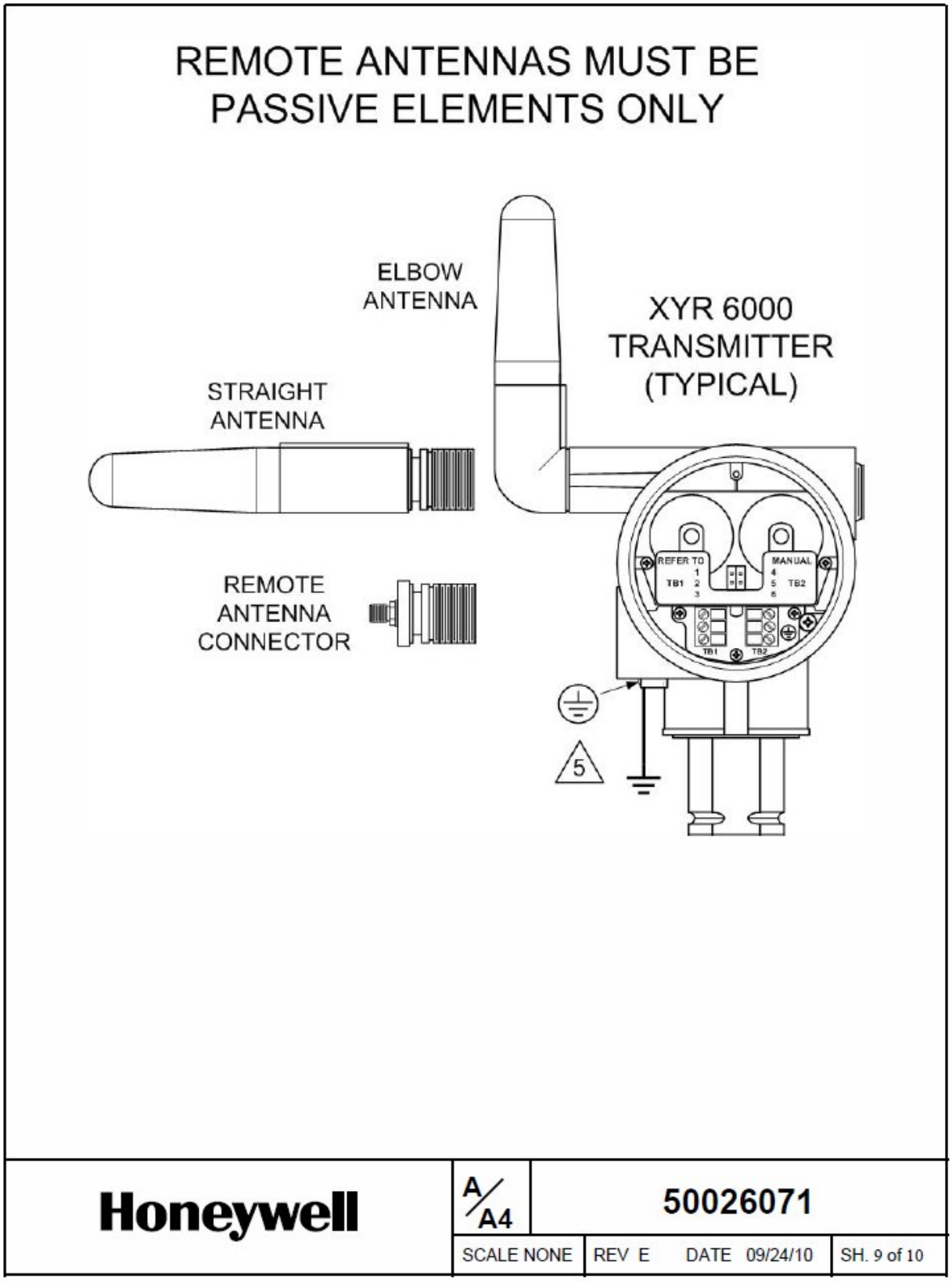
* There is no Antenna for this version

The above listed wireless transmitters may include an Omni-directional or unidirectional high-gain antenna. The high-gain antenna may be installed remote from the XYR 6000 with the cable length not to exceed 20m. The antenna cable shield shall be bonded to earth ground.

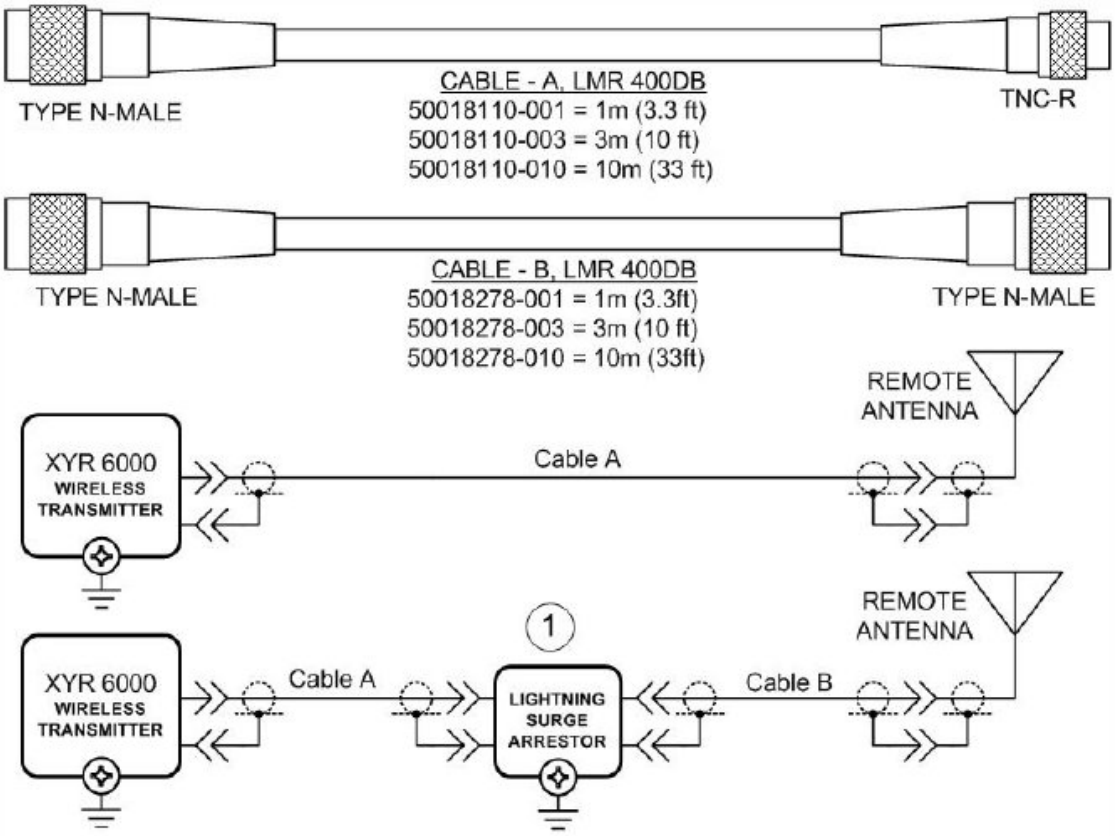
NON-INCENDIVE FIELD CIRCUIT PARAMETERS for remote antennas, cables & lightning arrestor:
Ca = 43 µF, La = 0.1 mH.

Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 7 of 10


24Vdc POWER SUPPLY OPTION (DC) SYSTEM DIAGRAM
DIV 2 / ZONE 2 HAZARDOUS AND NON-HAZARDOUS LOCATIONS
CLASS I, DIV 2, GROUPS A,B,C,D; CLASS II, GROUPS F & G, CLASS III, T4
CLASS I, ZONE 2, Ex / AEx nA GROUP IIC, T4
AMBIENT LIMITS: -40 < Ta < 80°C
XYR 6000
TRANSMITTER
(TYPICAL)
REFER TO MANUAL
24V
TB1
TB2
Terminate and insulate shield as close to terminal block as possible
Cable to be shielded twisted pair with total loop resistance ≤ 6.6Ω
10
NON-HAZARDOUS LOCATION
24 Vdc Supply
16.0 Vmin
28.0 Vmax
100 mAmax
+
–
11
GROUND SHIELD AT THIS END ONLY
Honeywell
A/A4
50026071
SCALE NONE
REV E
DATE 09/24/10
SH. 8 of 10


REMOTE ANTENNAS MUST BE
PASSIVE ELEMENTS ONLY
ELBOW
ANTENNA
XYR 6000
TRANSMITTER
(TYPICAL)
STRAIGHT
ANTENNA
REMOTE
ANTENNA
CONNECTOR
REFER TO
MANUAL
TB1
TB2
5
Honeywell
A/A4
50026071
SCALE NONE
REV E
DATE 09/24/10
SH. 9 of 10

Non-Incendive Field Wiring parameters for remote antennas, cables & lightning arrestor:
Ca ≤ 43 µF, La ≤ 48 mH.



CABLE PARAMETERS		
CABLE A, B LENGTH	CAPACITANCE	INDUCTANCE
1 m	78.4 pF	0.2 µH
3 m	235.2 pF	0.6 µH
10 m	784 pF	2.0 µH

NOTES:
1. Only lightning surge arrestors determined to be simple apparatus may be installed.

Honeywell	A/A4	50026071	
	SCALE NONE	REV E DATE 09/24/10	SH. 10 of 10

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PRE REL		
ISS	REVISION & DATE	APPD
E	09/24/10 ECO-0069377	VM

XYR 6000 WIRELESS TRANSMITTERS
CSA CERTIFIED & FM APPROVED DIVISION 1/ ZONE 0
INSTALLATION CONTROL DRAWING

NOTES:

1. Intrinsically safe installation shall be in accordance with the Canadian Electrical Code (CEC), part I, Section 18 for Canada, ANSI/NFPA 70, NEC® Articles 504 and 505 for the USA, and ANSI/ISA RP12.06.01.
2. CSA or FM ENTITY approved apparatus shall be installed in accordance with the manufacturer's Intrinsic Safety Control Drawing or shall be Simple Apparatus. Simple Apparatus are devices that will neither generate nor store more than 1.2V, 0.1A, 25mW, or 20µJ, such as switches, thermocouples, and RTDs.
3. The Intrinsic Safety ENTITY concept allows the interconnection of two ENTITY Approved Intrinsically safe devices with ENTITY parameters not specifically examined in combination as a system when:
   Uo or Voc (or Vt in the USA) ≤ Ui or Vmax, Io or Isc (or It in the USA) ≤ Ii or Imax, Ca or Co ≥ Ci + Ccable, La or Lo ≥ Li + Lcable, Po ≤ Pi. Where two separate barrier channels are required, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters that meet the above equations.
4. System Parameters:
   XYR 6000 and Field Transmitter Vmax ≥ Voc or Uo, Imax ≥ Isc or Io;
   XYR 6000 Ci + Field Transmitter Ci + Ccable ≤ Control Apparatus Ca,
   XYR 6000 Li + Field Transmitter Li + Lcable ≤ Control Apparatus La.
5. When the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 197pF/m (60 pF/ft), Inductance – 0.66µH/m (0.020 µH/ft).
6. For Class II and Class III installations where rigid metal conduit is not used, seal cable entries against dust and fibers using a NRTL listed cable gland fitting.
7. Control equipment that is connected to Associated apparatus must not use or generate more than 250 V.
8. Associated apparatus must be CSA Certified under the ENTITY Concept in Canada and FM ENTITY listed in the USA. Associated apparatus may be installed in a Class I, Division 2 Hazardous (Classified) location if so approved.
9. Non-Galvanically isolated apparatus (grounded Zener Barriers) must be connected to a suitable ground electrode per NFPA 70, Article 504 and 505 in the USA and CEC Part I, Section 10 in Canada. The resistance of the ground path must be less than 1.0 ohm.
10. Transmitters shall have the enclosure bonded to ground in accordance with CEC part I, Section 18-074, Bonding in hazardous locations, and Rule 10-814
11. Shielded two-wire cable is required for EMC conformity and is recommended for all installations. The 4-20 mA loop shield shall be grounded at the supply (barrier) end to the barrier ground bus only when grounded Zener barriers are used. The 4-20 mA loop shield shall be grounded at the transmitter end only when galvanically isolated barriers are used.

MASTER FILE TYPE: MS WORD

CERTIFICATION DOCUMENT **ENGINEERING CHANGE ORDERS (ECOs) MUST BE AUTHORIZED BY APPROVALS ENGINEERING**	DRAWN	RJP	1/3/08
	CHECKED	FMK	1/3/08
	DEV ENG	NOTE 15	
	MFG ENG		
	QA ENG		
	TOLERANCE UNLESS NOTED ANGULAR DIMENSION		

Honeywell

CSA & FM Control Drawing
XYR 6000 Wireless Transmitters
Division 1 / Zone 0

A A4	50021730	
SCALE	USED ON	SH.1 OF 11

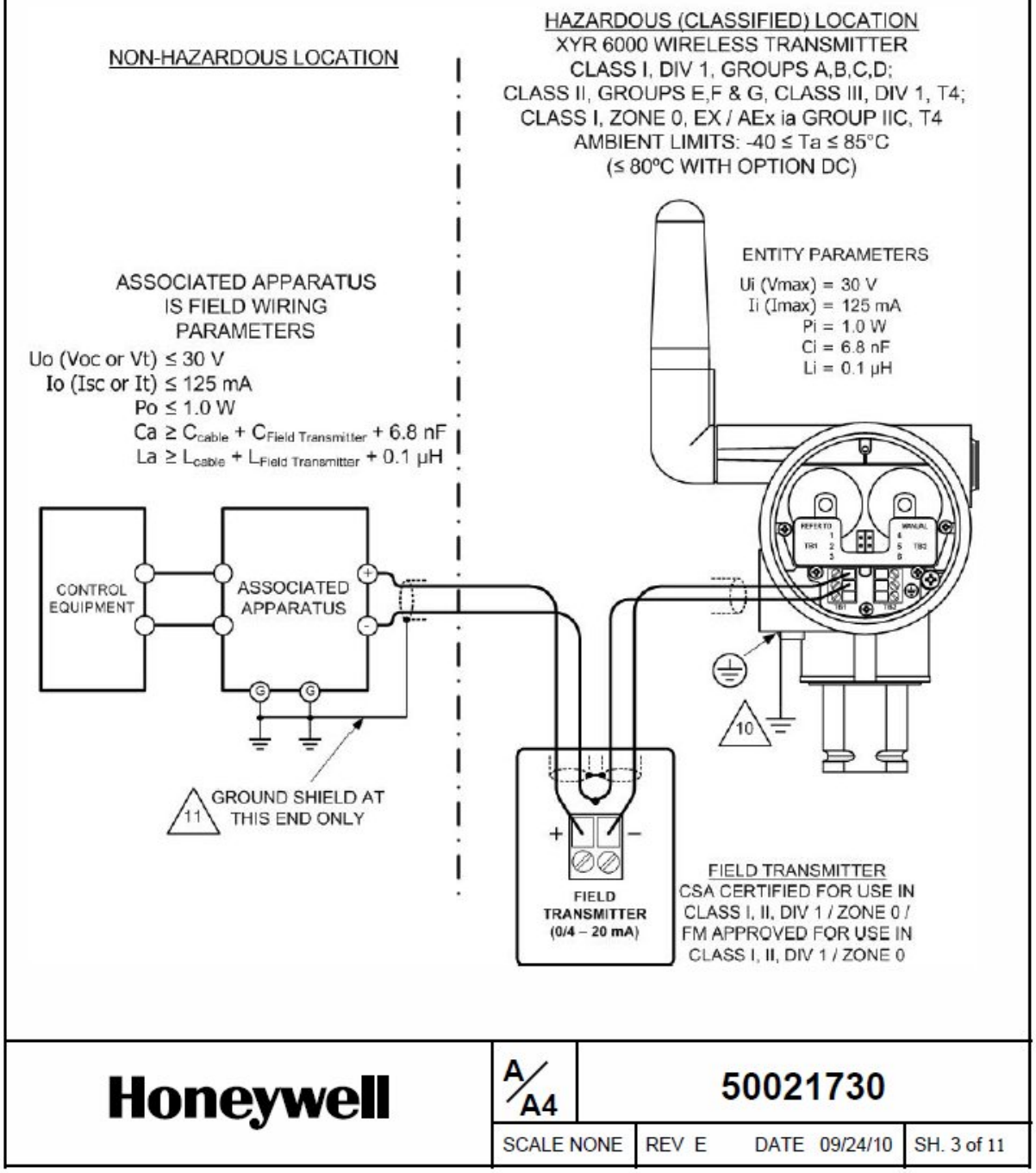
12. Divisions 1 & 2, and Zone 0: WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS.
13. Division 2: WARNING: EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
14. NO REVISION OF THIS CONTROL DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM CSA AND FM Approvals.
15. For release approvals see ECO # 0036573.

XYR 6000 STIW600	Field Transmitter	Associated Apparatus
Ui or Vmax = 30 V	Ui, Vmax, or Vt ≥	Uo, Voc or Vt ≤ 30 V
Ii or Imax = 125 mA	Ii, Imax, or It ≥	Io, Isc or It ≤ 125 mA
Pi or Pmax = 1.0 W	Pmax ≥ Po	$Po \leq \frac{(Voc \text{ or } Vt \cdot Isc \text{ or } It)}{4} \leq 1.0\ W$
C_i = 6.8 nF	$C_i \leq$ Associated Apparatus Ca – Ccable – Ci of other transmitter connected to two-channel barrier.	Ca (or Co) > 6.8 nF
L_i = 0	$L_i \leq$ Associated Apparatus La – Lcable – Li of other transmitter connected to two-channel barrier.	La (or Lo) > 0 mH

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 2 of 11

CSA CERTIFIED & FM APPROVED INTRINSICALLY SAFE INSTALLATION CONTROL DRAWING – TWO-WIRE CONFIGURATION

XYR 6000, STIW600, 0–20 mA / 4–20 mA HIGH LEVEL INPUT INTERFACE



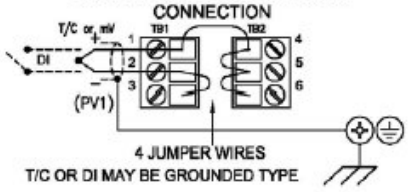
Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 3 of 11

WIRELESS TEMPERATURE AND DIGITAL INPUT (DI) TRANSMITTERS
STTW400, STTW401, STXW500, STT820, STTW830 & STTW840

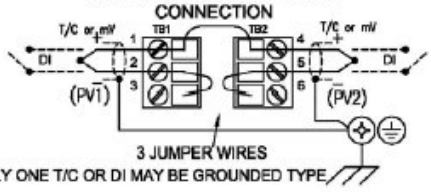
HAZARDOUS (CLASSIFIED)LOCATION

CLASS I, DIV 1, GROUPS A, B, C, D; CLASS II DIV 1, GROUPS E, F & G, CLASS III, DIV 1, T4;
CLASS I, ZONE 0 Ex/AEx ia GROUP IIC, T4;
AMBIENT LIMITS: –40 < Ta < 85°C (< 80°C WITH OPTION DC)

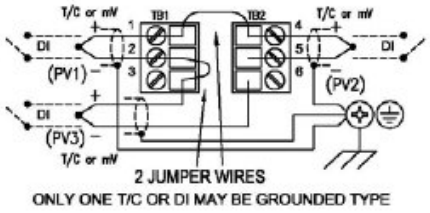
SINGLE THERMOCOUPLE OR DI CONNECTION



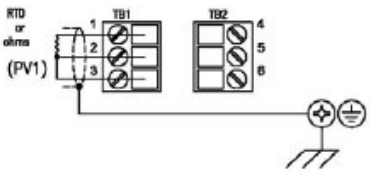
TWO THERMOCOUPLE OR DI CONNECTION



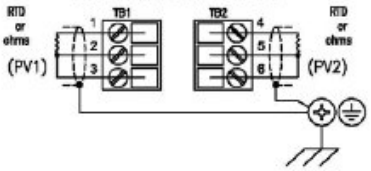
THREE THERMOCOUPLE OR DI CONNECTION



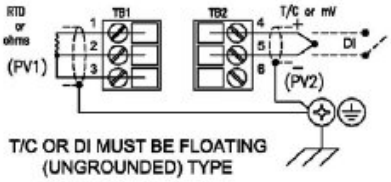
SINGLE THREE-WIRE RTD



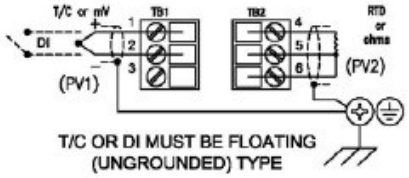
TWO THREE-WIRE RTD's



SINGLE THREE-WIRE RTD & T/C OR DI



T/C OR DI & SINGLE THREE-WIRE RTD



IS FIELD WIRING PARAMETERS

WITH OPTION DC
$C_a = 2.7\ \mu F \geq C_{Cable}$
$L_a = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$C_a = 9.3\ \mu F \geq C_{Cable}$
$L_a = 100\ mH \geq L_{Cable}$

NOTES:

1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

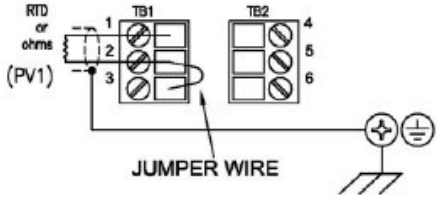
Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 4 of 11

WIRELESS TEMPERATURE AND DIGITAL INPUT (DI) TRANSMITTERS
STTW400, STTW401, STXW500, STTW820, STTW830 & STTW840

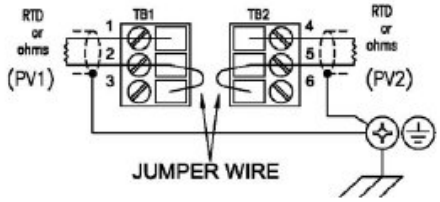
HAZARDOUS (CLASSIFIED)LOCATION

CLASS I, DIV 1, GROUPS A, B, C, D; CLASS II DIV 1, GROUPS E, F & G, CLASS III, DIV 1, T4;
CLASS I, ZONE 0 Ex/AEx ia GROUP IIC, T4;
AMBIENT LIMITS: –40 < Ta < 85°C (< 80ºC WITH OPTION DC)

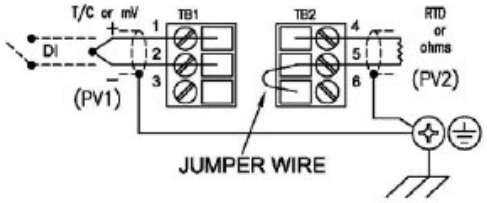
SINGLE TWO-WIRE RTD



TWO TWO-WIRE RTD

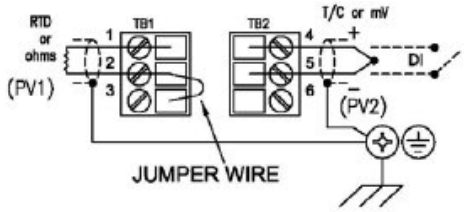


T/C OR DI & SINGLE TWO-WIRE RTD



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

SINGLE TWO-WIRE RTD & T/C OR DI



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:

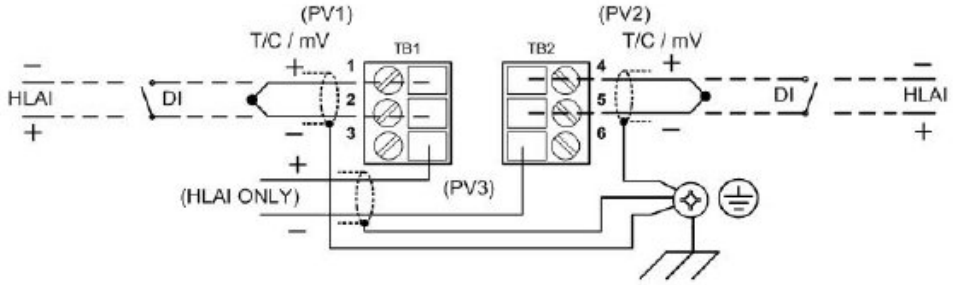
1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 5 of 11

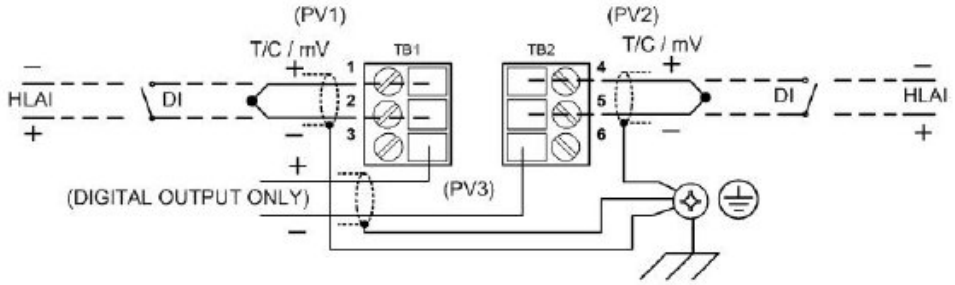
WIRELESS UNIVERSAL I/O - STUW700 & STUW701

HAZARDOUS (CLASSIFIED) LOCATION
CLASS I, DIV 1, GROUPS A,B,C,D; CLASS II, DIV 1, GROUPS E,F & G, CLASS III, DIV 1, T4;
CLASS I, ZONE 0, Ex / AEx ia GROUP IIC, T4; AMBIENT LIMITS: -40 ≤ Ta ≤ 85°C (≤ 80°C WITH OPTION DC)

STUW700 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI) AND HIGH LEVEL ANALOG INPUT (HLAI)



STUW701 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI), HIGH LEVEL ANALOG INPUT (HLAI) AND DIGITAL OUTPUT (DO)



HIGH LEVEL ANALOG INPUT & DIGITAL OUTPUT ENTITY PARAMETERS

Ui (Vmax) = 30 V
Ii (Imax) = 125 mA
Pi = 1.0 W
Ci = 6.8 nF
Li = 0.1 µH

DIGITAL INPUT AND T/C FIELD WIRING PARAMETERS

Ca = 2.7 µF ≥ C_{Cable}
La = 100 mH ≥ L_{Cable}

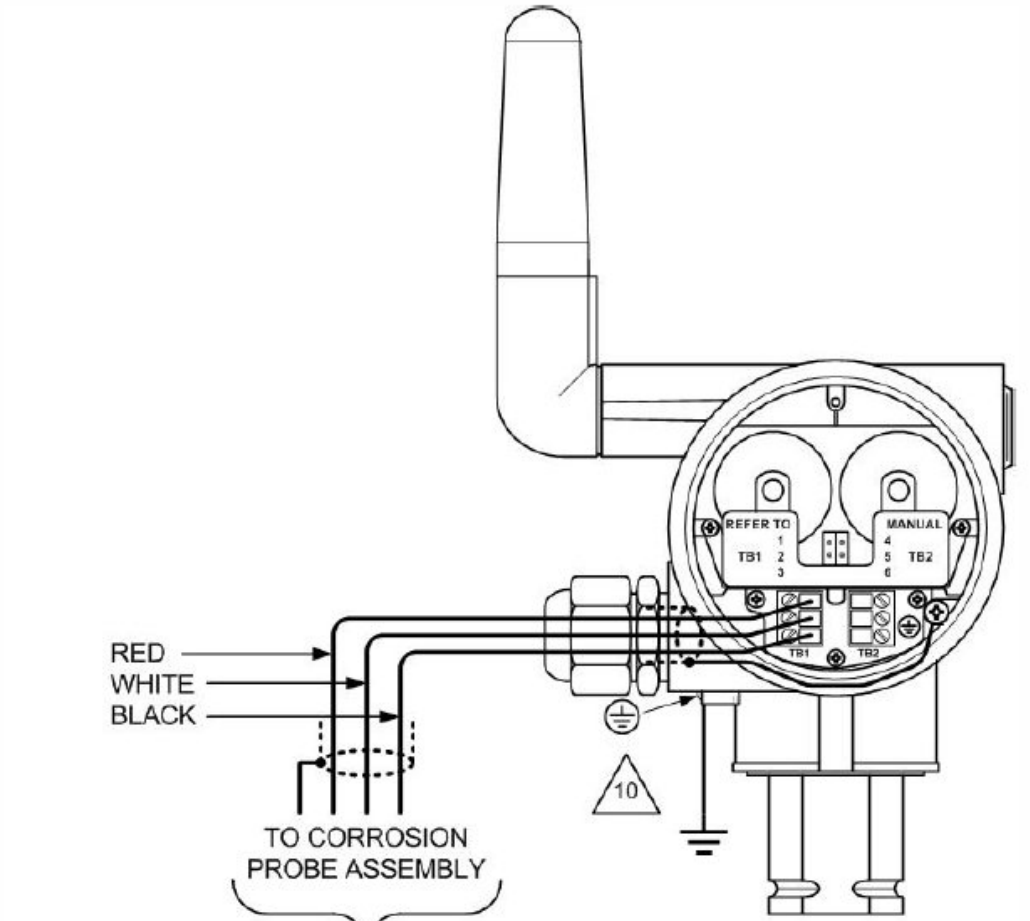
NOTES:

1. Shielded HLAI, DI, DO, thermocouple, mV, or switch input cable is required for EMC conformity and is recommended for all installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the switch, remote HLAI transmitter location, or remote DO supply the shield shall not be connected at the Wireless transmitter end.

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 6 of 11

XYR 6000, MODEL CETW6000M-W WIRELESS CORROSION TRANSMITTER AND CETW6000M-D SmartCET CORROSION DATA LOGGER

HAZARDOUS (CLASSIFIED) LOCATION
CLASS I, DIV 1, GROUPS A,B,C,D; CLASS II, GROUPS E,F&G, CLASS III, DIV 1, T4;
CLASS I, ZONE 0, Ex / AEx ia GROUP IIC, T4; AMBIENT LIMITS: -30 ≤ Ta ≤ 85°C
(≤80°C WITH OPTION DC)



PROBE AND PROCESS ELECTRODES MUST BE PASSIVE ELEMENTS ONLY. PROBE AND CABLE PARAMETERS MUST NOT EXCEED 43 µF ≥ C_{PROBE} + C_{CABLE} AND 100 mH ≥ L_{PROBE} + L_{CABLE}

NOTE: Probes used with the Corrosion Transmitter must be acceptable to the authority having jurisdiction with respect to pressure and temperature rating.

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 7 of 11

The following models may be supplied with internal battery power, or externally supplied 24Vdc only when connected to the MTL Associated Apparatus listed on the following system diagram.

NOTE: XYR 6000 ambient limits with 24V Power Supply are –40°C to +80°C.

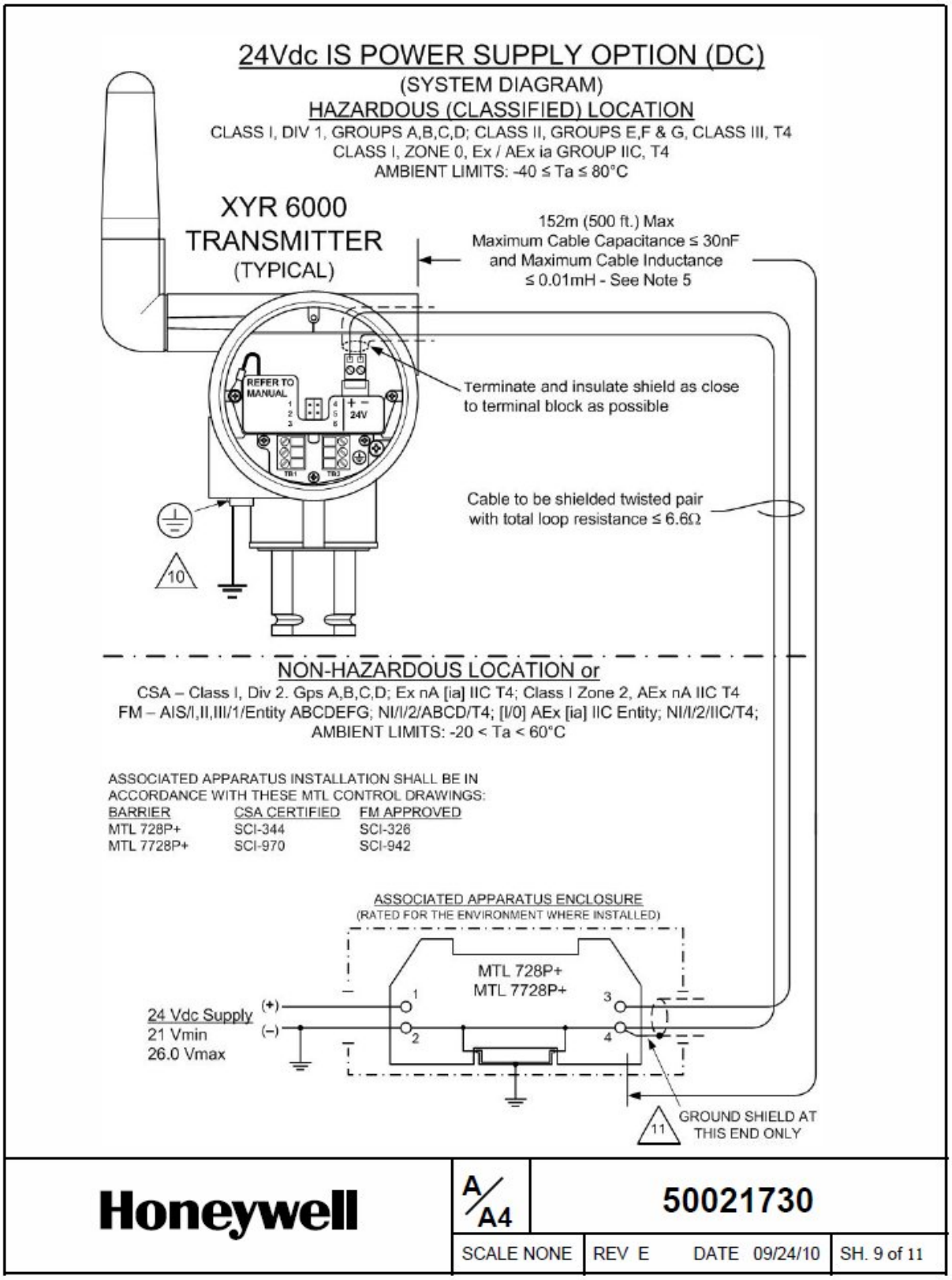
Model	Description	
STGW944	Series 900 Wireless Transmitter, Dual Head Gage Pressure (GP)	0-500 psi / 0-35 bar
STGW974		0-3000 psi / 0-210 bar
STDW924	Series 900 Wireless Transmitter, Differential Pressure (DP)	0-400" H_2O / 0-1000 mbar
STDW930		0-100 psi / 0-7 bar
STDW974		0-3000 psi / 0-210 bar
STGW94L	Series 900 Wireless Transmitter, In-Line Gage & Absolute Pressure	0-500 psi / 0-35 bar
STGW97L		0-3000 psi / 0-210 bar
STGW98L		0-6000 psi / 0-415 bar
STGW99L		0-10,000 psig / 0-690 bar
STAW94L		0-500 psi / 0-35 barA
STTW400	Wireless Temperature Transmitter	Transmitter Only with Remote Sensors: 3 T/C's, or 2 RTD's
STTW401	Wireless Temperature and Digital Input Transmitter	Transmitter Only with Remote Sensors: 1 T/C AND 2 Digital Inputs
STXW500	Wireless Digital Input Transmitter	Three DI (Switch) Inputs
STUW700	Wireless Universal I/O Interface	Three Inputs: 4-20 mA Analog, T/C's, or DI (Switch)
STUW701	Wireless Universal I/O Interface	Two Inputs: 4-20 mA Analog, T/C or DI and One Digital Output (Solid State)
STTW820 STTW830 STTW840	Wireless Temperature Transmitter	Transmitter Integrally Mounted to Thermowell or Probe Assembly
STIW600	Wireless High Level Input Interface	4-20 mA Analog Input
CETW6000M-W	SmartCET Wireless Transmitter, Corrosion Monitoring	Millivolt Input from Remote Mounted Corrosion Probe
CETW6000M-D	SmartCET Corrosion Data Logger	Millivolt Input from Remote Mounted Corrosion Probe, Data via IrDA Port *

* There is no Antenna for this version

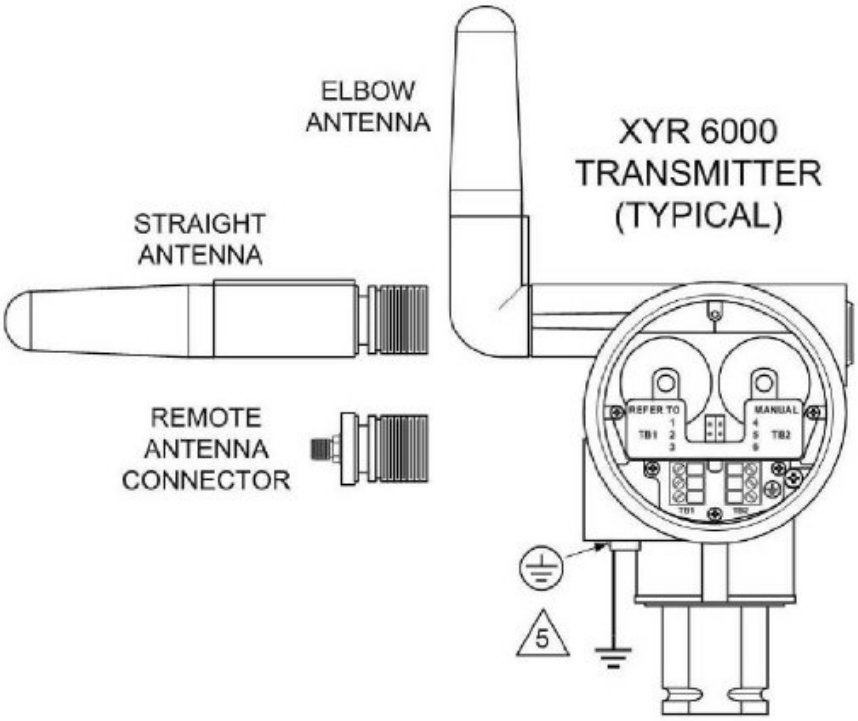
The above listed wireless transmitters may include an Omni-directional or unidirectional high-gain antenna. The high-gain antenna may be installed remote from the XYR 6000 with the cable length not to exceed 20m. The antenna cable shield shall be bonded to earth ground.

IS Entity parameters for remote antennas, cables & lightning arrestor:
Ca = 43 µF, La = 0.1 mH.

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 8 of 11

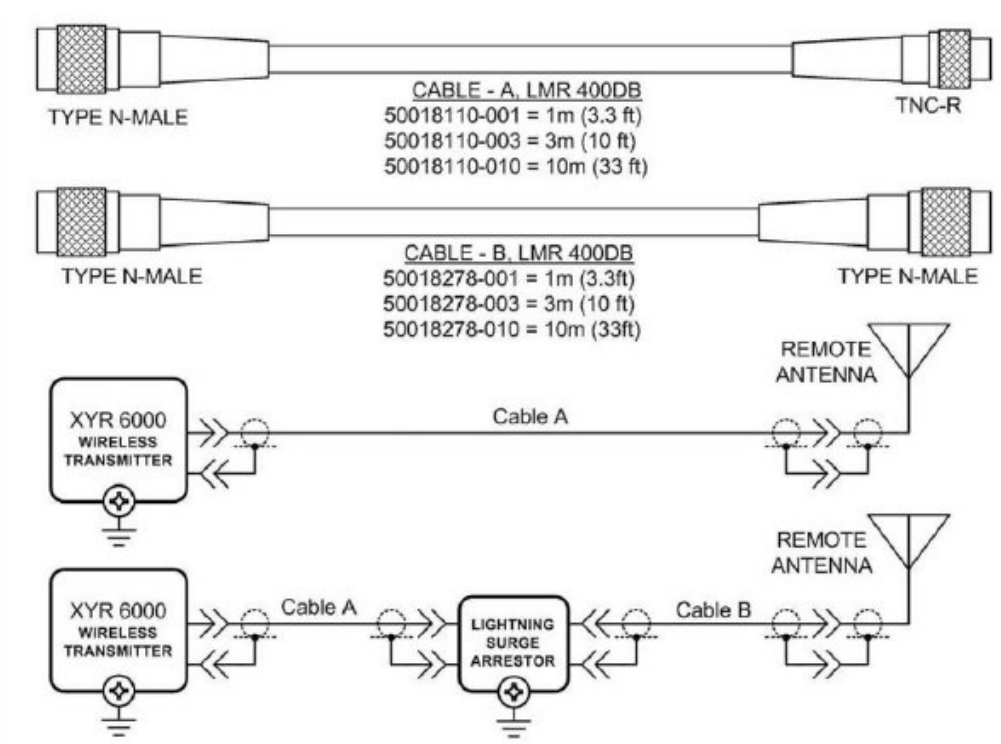

24Vdc IS POWER SUPPLY OPTION (DC)
(SYSTEM DIAGRAM)
HAZARDOUS (CLASSIFIED) LOCATION
CLASS I, DIV 1, GROUPS A,B,C,D; CLASS II, GROUPS E,F & G, CLASS III, T4
CLASS I, ZONE 0, Ex / AEx ia GROUP IIC, T4
AMBIENT LIMITS: -40 ≤ Ta ≤ 80°C
XYR 6000
TRANSMITTER
(TYPICAL)
152m (500 ft.) Max
Maximum Cable Capacitance ≤ 30nF
and Maximum Cable Inductance
≤ 0.01mH - See Note 5
REFER TO MANUAL
24V
Terminate and insulate shield as close to terminal block as possible
Cable to be shielded twisted pair with total loop resistance ≤ 6.6Ω
10
NON-HAZARDOUS LOCATION or
CSA – Class I, Div 2. Gps A,B,C,D; Ex nA [ia] IIC T4; Class I Zone 2, AEx nA IIC T4
FM – AIS/I,II,III/1/Entity ABCDEFG; NI/I/2/ABCD/T4; [I/0] AEx [ia] IIC Entity; NI/I/2/IIC/T4;
AMBIENT LIMITS: -20 < Ta < 60°C
ASSOCIATED APPARATUS INSTALLATION SHALL BE IN ACCORDANCE WITH THESE MTL CONTROL DRAWINGS:
BARRIER CSA CERTIFIED FM APPROVED
MTL 728P+ SCI-344 SCI-326
MTL 7728P+ SCI-970 SCI-942
ASSOCIATED APPARATUS ENCLOSURE
(RATED FOR THE ENVIRONMENT WHERE INSTALLED)
MTL 728P+
MTL 7728P+
24 Vdc Supply
21 Vmin
26.0 Vmax
(+)
(–)
1
2
3
4
11
GROUND SHIELD AT THIS END ONLY
Honeywell
A/A4
50021730
SCALE NONE
REV E
DATE 09/24/10
SH. 9 of 11

REMOTE ANTENNAS MUST BE PASSIVE ELEMENTS ONLY



Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 10 of 11

IS Entity parameters for remote antennas, cables & lightning arrestor:
Ca ≤ 43 µF, La ≤ 0.1 mH.



CABLE PARAMETERS		
CABLE A, B LENGTH	CAPACITANCE	INDUCTANCE
1 m	78.4 pF	0.2 µH
3 m	235.2 pF	0.6 µH
10 m	784 pF	2.0 µH

NOTES:

1. Only lightning surge arrestors determined to be simple apparatus may be installed.

Honeywell	A/A4	50021730	
	SCALE NONE	REV E DATE 09/24/10	SH. 11 of 11

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PRE REL		
ISS	REVISION & DATE	APPD
E	09152010 ECO-0069377	VM

ATEX INTRINSICALLY SAFE (ia) AND NON-SPARKING (n) INSTALLATION CONTROL DRAWING XYR 6000 WIRELESS TRANSMITTERS

NOTES:

1. Electrical apparatus and circuits can be used in zone 0 if they are in accordance with IEC 60079-11 (category "ia" – intrinsic safety), the applicable parts of IEC 60079-0 and with the requirements of IEC 60079-14, 12.3 (see also 5.2.4).
2. Electrical apparatus and circuits can be used in zone 2 if they are in accordance with IEC 60079-15, the applicable parts of IEC 60079-0 and with the requirements of IEC 60079-14, 12.2.
3. ATEX certified intrinsically safe apparatus shall be installed in accordance with the manufacturer's Intrinsic Safety Control Drawing or shall be Simple Apparatus. Simple Apparatus are devices that will neither generate nor store more than 1.2V, 0.1A, 25mW, or 20µJ, such as switches, thermocouples, and RTDs. ATEX certified non-sparking apparatus shall bee installed per this control drawing.
4. Intrinsic Safety system parameters shall comply with the following:
   $U_o \leq U_i$, $I_o \leq I_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$, $P_o \leq P_i$. Where two separate barrier channels are required, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters that meet the above equations.
5. System Parameters:
   XYR 6000 and Field Transmitter $U_i \geq U_o$, $I_i \geq I_o$;
   XYR 6000 C_i + Field Transmitter C_i + $C_{cable} \leq$ Associated Apparatus C_o,
   XYR 6000 L_i + Field Transmitter L_i + $L_{cable} \leq$ Associated Apparatus L_o.
6. When the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 197pF/m, Inductance – 0.66µH/m.
7. For ATEX Ⓔx II 1/2/3 GD; IEC 60079-0 Ex II/III installations where rigid metal conduit is not used, seal cable entries against dust and fibers using a certified cable gland fitting.
8. Control equipment that is connected to associated apparatus must not use or generate more than 250 V.
9. Associated apparatus must be ATEX certified. Associated apparatus may be installed in a Zone 2 location if so approved.
10. Non-Galvanically isolated apparatus (grounded Zener Barriers) must be connected to a suitable ground electrode per IEC 60079-14, Clause 12.2.4. The resistance of the ground path must be less than 1.0 ohm.
11. Shielded two-wire cable is required for EMC conformity and is recommended for all installations. The 4-20 mA loop shield shall be grounded at the supply (barrier) end to the barrier ground bus only when grounded Zener barriers are used. The 4-20 mA loop shield shall be grounded at the transmitter end only when galvanically isolated barriers are used.

MASTER FILE TYPE: MS WORD

CERTIFICATION DOCUMENT ENGINEERING CHANGE ORDERS (ECOs) MUST BE AUTHORIZED BY APPROVALS ENGINEERING	DRAWN	F.Kent		**Honeywell**
	CHECKED			ATEX Control Drawing XYR 6000 Wireless Transmitters Zones 0, 1 & 2
	DEV ENG	NOTE 15		
	MFG ENG			
	QA ENG			A A4 — 50033269
	TOLERANCE UNLESS NOTED ANGULAR DIMENSION			SCALE — USED ON — SH.1 OF 11

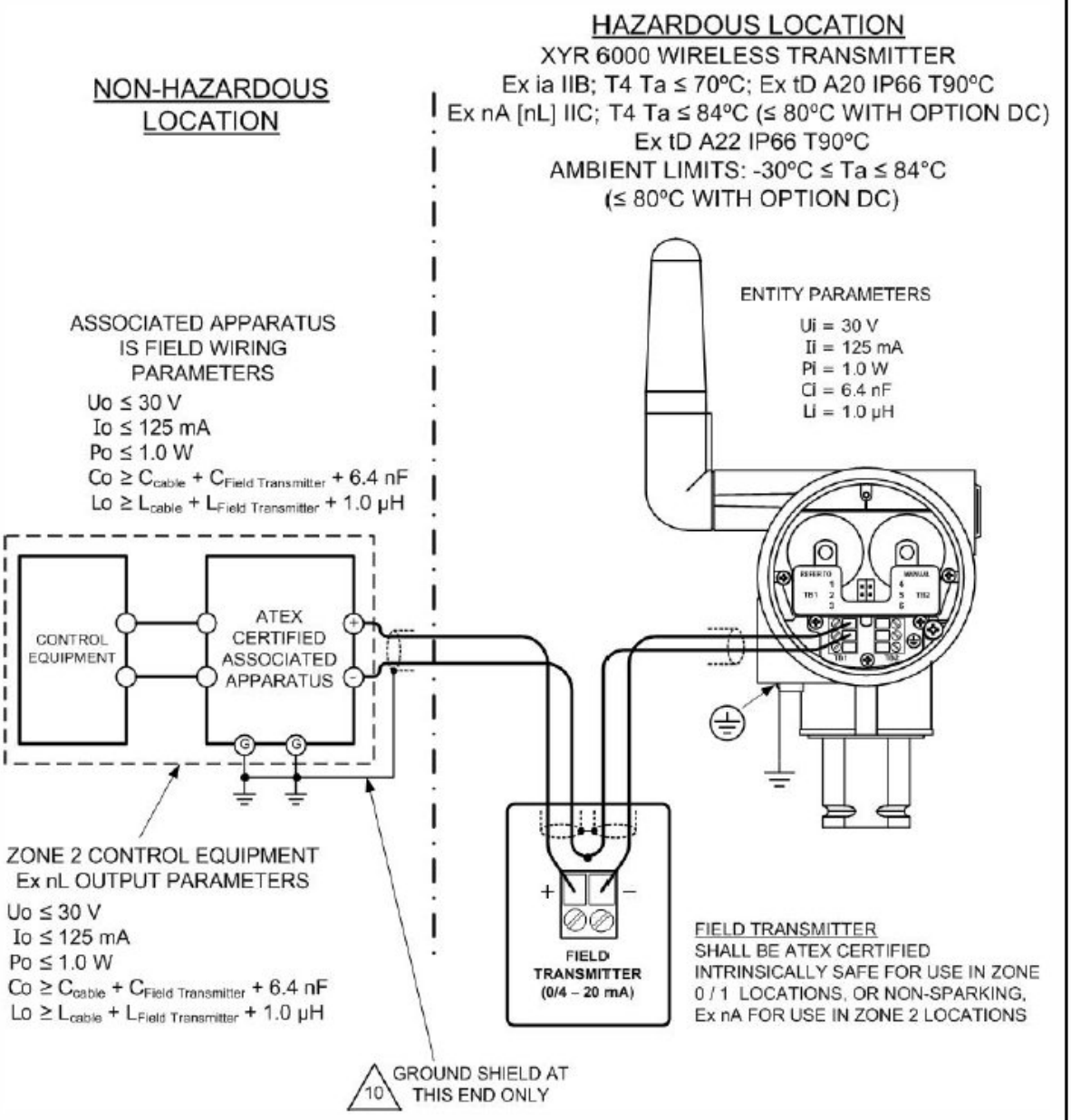
12. Zone 0 or Zone 1: WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS.
13. Zone 2: WARNING: EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
14. NO REVISION OF THIS CONTROL DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM THE NOTIFIED BODY.
15. For release approvals see ECO # 0049814

XYR 6000 STIW600	Field Transmitter	Associated Apparatus
U_i = 30 V	$U_i \geq$	$U_o \leq$ 30 V
I_i = 125 mA	$I_i \geq$	$I_o \leq$ 125 mA
P_i = 1.0 W	$P_i \geq P_o$	$P_o \leq \frac{(V_{oc} \text{ or } V_t \cdot I_{sc} \text{ or } I_t)}{4} \leq$ 1.0 W
C_i = 6.4 nF	$C_i \leq$ Associated Apparatus Co – Ccable – Ci of other transmitter connected to two-channel barrier.	$C_o >$ 6.4 nF
L_i = 1.0 µH	$L_i \leq$ Associated Apparatus Lo – Lcable – Li of other transmitter connected to two-channel barrier.	$L_o >$ 1.0 µH

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.2 of 11

ATEX CERTIFIED INTRINSICALLY SAFE (ia) AND NON-SPARKING (n)
INSTALLATION CONTROL DRAWING – TWO-WIRE CONFIGURATION

XYR 6000, STIW600, 0–20 mA / 4–20 mA HIGH LEVEL INPUT INTERFACE



Honeywell	A/A4	50033269
	SCALE NONE REV: E DATE: 09/15/10	SH.3 of 11

WIRELESS TEMPERATURE AND DIGITAL INPUT(DI) TRANSMITTERS
STTW400, STTW401, STXW500, STT820, STTW830 & STTW840

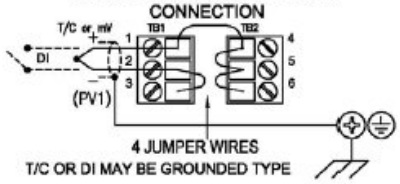
HAZARDOUS LOCATION

Ex ib [ia] IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC (WITH OPTION BA)

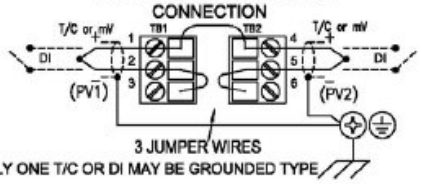
Ex nA [nL] IIC; T4 Ta = 84ºC; DIP A22 IP66 T90ºC (< 80ºC WITH OPTION DC)

AMBIENT LIMITS: –40 < Ta < 84°C (< 80°C WITH OPTION DC)

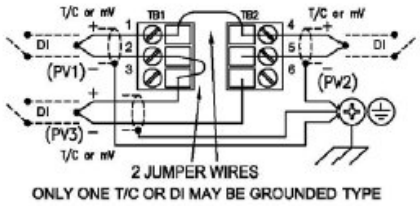
SINGLE THERMOCOUPLE OR DI CONNECTION



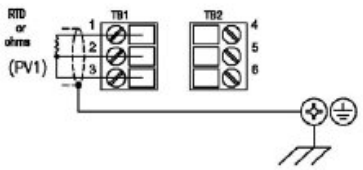
TWO THERMOCOUPLE OR DI CONNECTION



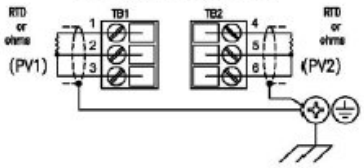
THREE THERMOCOUPLE OR DI CONNECTION



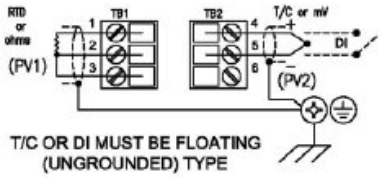
SINGLE THREE-WIRE RTD



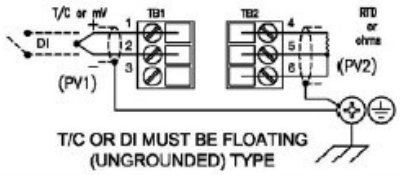
TWO THREE-WIRE RTD's



SINGLE THREE-WIRE RTD & T/C OR DI



T/C OR DI & SINGLE THREE-WIRE RTD



IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:

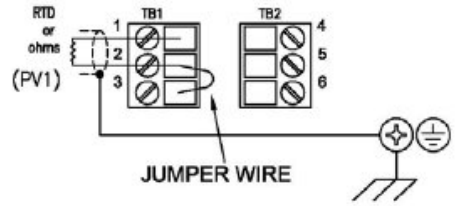
1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.4 of 11

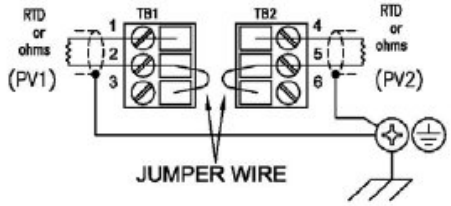
WIRELESS TEMPERATURE AND DIGITAL INPUT (DI) TRANSMITTERS
STTW400, STTW401, STXW500, STTW820, STTW830 & STTW840
HAZARDOUS LOCATION

Ex ib [ia] IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC (WITH OPTION BA)
Ex nA [nL] IIC; T4 Ta = 84ºC; DIP A22 IP66 T90ºC (< 80ºC WITH OPTION DC)
AMBIENT LIMITS: –40 < Ta < 84°C (< 80ºC WITH OPTION DC)

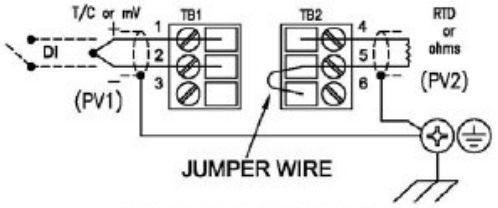
SINGLE TWO-WIRE RTD



TWO TWO-WIRE RTD

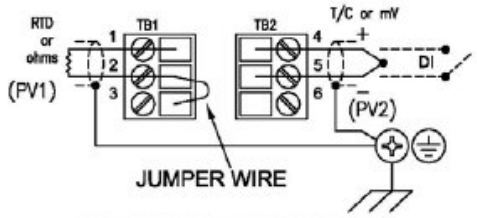


T/C OR DI & SINGLE TWO-WIRE RTD



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

SINGLE TWO-WIRE RTD & T/C OR DI



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:

1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.5 of 11

WIRELESS UNIVERSAL I/O - STUW700 & STUW701

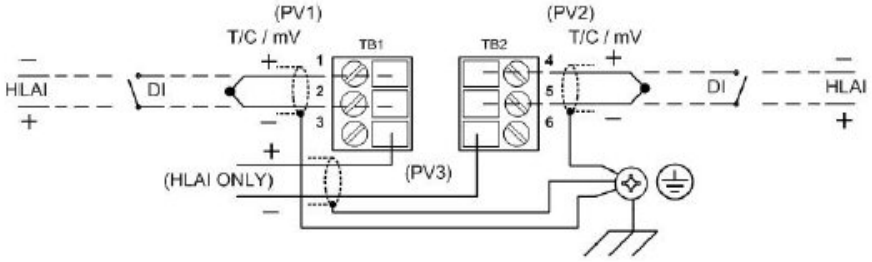
HAZARDOUS LOCATION

Ex ia IIB; T4 Ta ≤ 70ºC; Ex tD A20 IP66 T90ºC

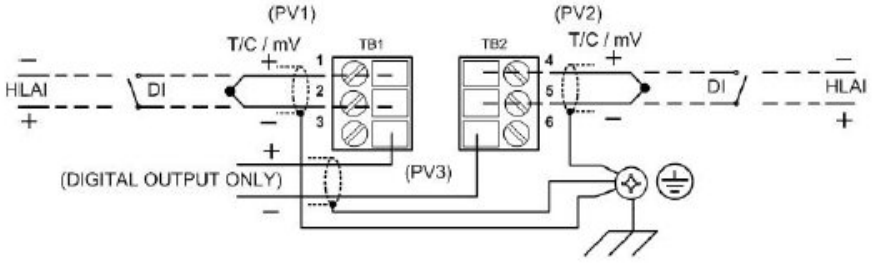
Ex nA [nL] IIC; T4 Ta ≤ 84ºC (≤ 80ºC WITH OPTION DC) Ex tD A22 IP66 T90ºC

AMBIENT LIMITS: -40ºC ≤ Ta ≤ 84°C (≤ 80ºC WITH OPTION DC)

STUW700 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI) AND HIGH LEVEL ANALOG INPUT (HLAI)



STUW701 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI), HIGH LEVEL ANALOG INPUT (HLAI) AND DIGITAL OUTPUT (DO)



HIGH LEVEL ANALOG INPUT & DIGITAL OUTPUT ENTITY PARAMETERS

Ui (Vmax) = 30 V
Ii (Imax) = 125 mA
Pi = 1.0 W
Ci = 6.8 nF
Li = 0.1 µH

DIGITAL INPUT AND T/C FIELD WIRING PARAMETERS

Ca = 100 µF ≥ C_{Cable}
La = 100 mH ≥ L_{Cable}

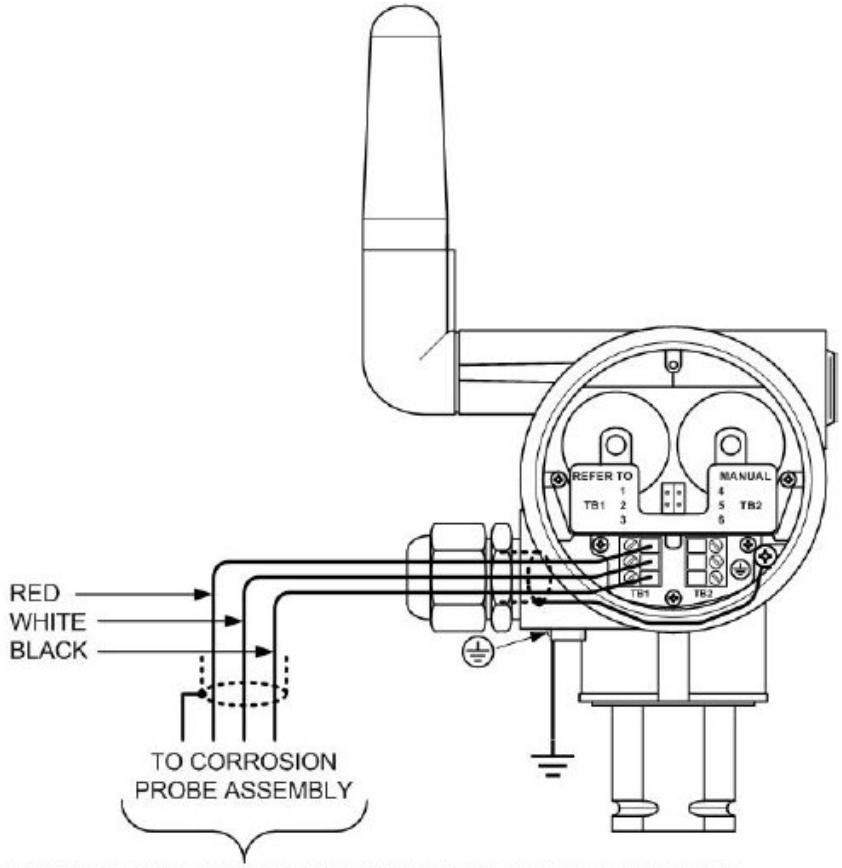
NOTES:

1. Shielded HLAI, DI, DO, thermocouple, mV, or switch input cable is required for EMC conformity and is recommended for all installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the switch, remote HLAI transmitter location, or remote DO supply the shield shall not be connected at the Wireless transmitter end.

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.6 of 11

XYR 6000, MODEL CETW6000M
WIRELESS CORROSION TRANSMITTER

Ex ia IIB; T4 Ta ≤ 70ºC; Ex tD A20 IP66 T90ºC
Ex nA [nL] IIC; T4 Ta ≤ 84ºC (≤ 80ºC WITH OPTION DC)
Ex tD A22 IP66 T90ºC
AMBIENT LIMITS: -30ºC ≤ Ta ≤ 84°C (≤ 80ºC WITH OPTION DC)



PROBE AND PROCESS ELECTRODES MUST BE PASSIVE ELEMENTS ONLY. PROBE AND CABLE PARAMETERS MUST NOT EXCEED 43 µF ≥ C_{PROBE} + C_{CABLE} AND 0.25 mH ≥ L_{PROBE} + L_{CABLE}

NOTE: Probe used with the Corrosion Transmitter must be acceptable to the competent body having jurisdiction with respect to pressure and temperature rating.

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.7 of 11

The following models may be supplied with internal battery power, or externally supplied 24Vdc only when connected to the MTL Associated Apparatus listed on the following system diagram.

NOTE: XYR 6000 ambient limits with 24V Power Supply are –40°C to +80°C.

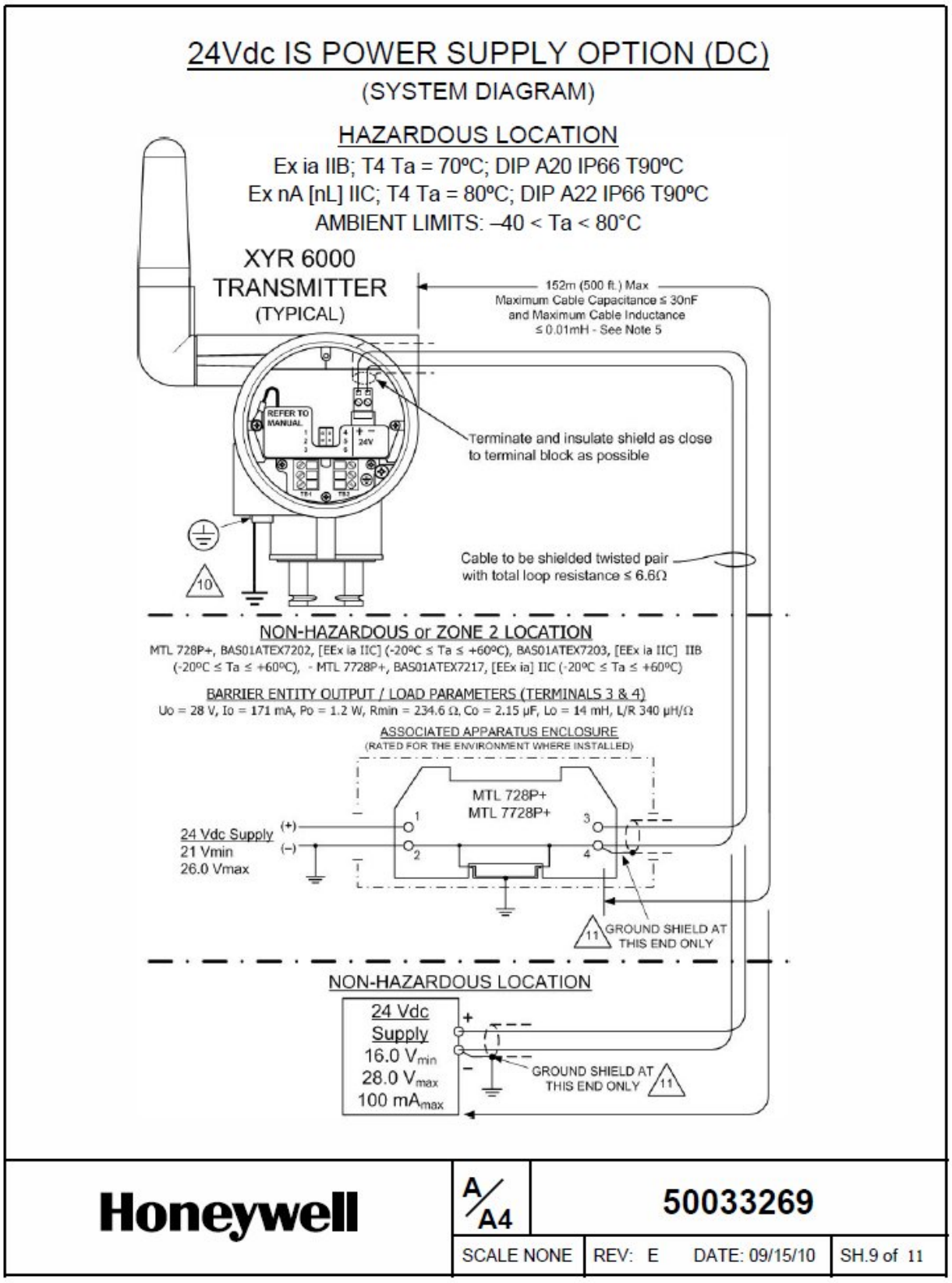
Model	Description	
STGW944	Series 900 Wireless Transmitter, Dual Head Gage Pressure (GP)	0-500 psi / 0-35 bar
STGW974		0-3000 psi / 0-210 bar
STDW924	Series 900 Wireless Transmitter, Differential Pressure (DP)	0-400" H_2O / 0-1000 mbar
STDW930		0-100 psi / 0-7 bar
STDW974		0-3000 psi / 0-210 bar
STGW94L	Series 900 Wireless Transmitter, In-Line Gage & Absolute Pressure	0-500 psig / 0-35 bar
STGW97L		0-3000 psig / 0-210 bar
STGW98L		0-6000 psig / 0-210 bar
STGW99L		0-10,000 psig / 0-690 bar
STAW94L		0-500 psia / 0-35 barA
STTW400	Wireless Temperature Transmitter	Transmitter Only with Remote Sensors: 3 T/C's, or 2 RTD's
STTW401	Wireless Temperature and Digital Input Transmitter	Transmitter Only with Remote Sensors: 1 T/C AND 2 Digital Inputs
STXW500	Wireless Digital Input Transmitter	Three DI (Switch) Inputs
STUW700	Wireless Universal I/O Interface	Three Inputs: 4-20 mA Analog, T/C's, or DI (Switch)
STUW701	Wireless Universal I/O Interface	Two Inputs: 4-20 mA Analog, T/C or DI and One Digital Output (Solid State)
STTW820 STTW830 STTW840	Wireless Temperature Transmitter	Transmitter Integrally Mounted to Thermowell or Probe Assembly
STIW600	Wireless High Level Input Interface	4-20 mA Analog Input
CETW6000M-W	SmartCET Wireless Transmitter, Corrosion Monitoring	Millivolt Input from Remote Mounted Corrosion Probe
CETW6000M-D	SmartCET Corrosion Data Logger	Millivolt Input from Remote Mounted Corrosion Probe, Data via IrDA Port *

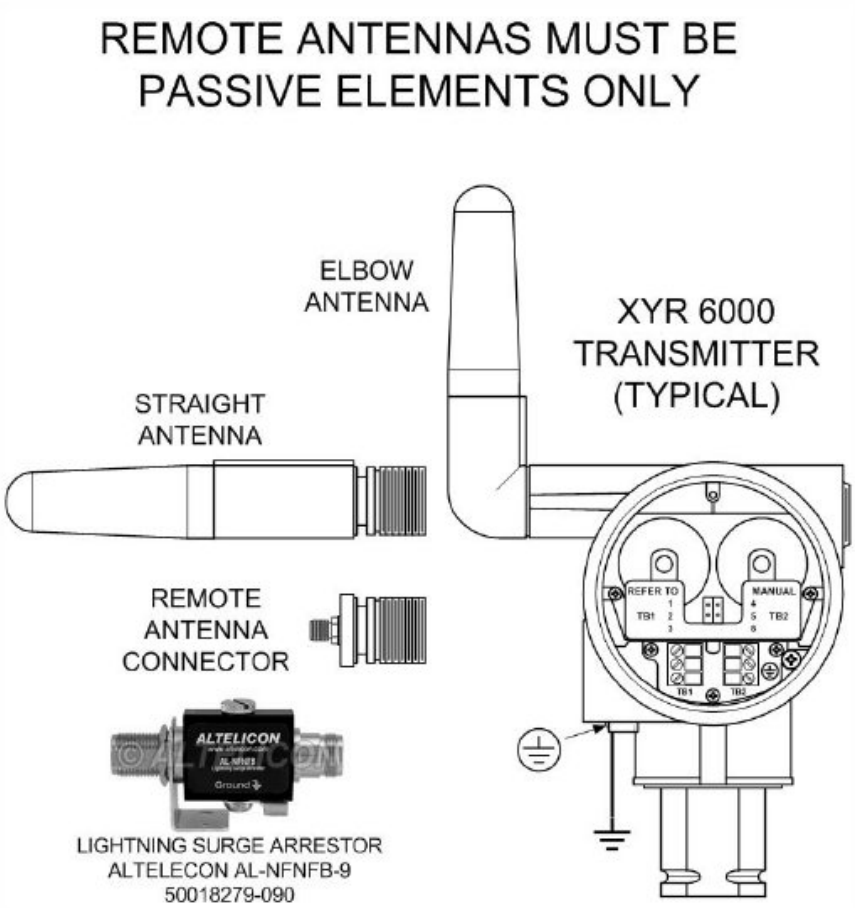
* There is no Antenna for this version

The above listed wireless transmitters may include an Omni-directional or unidirectional high-gain antenna. The high-gain antenna may be installed remote from the XYR 6000 with the cable length not to exceed 20m. The antenna cable shield shall be bonded to earth ground.

IS Entity parameters for remote antennas, cables & lightning arrestor:
Ca = 43 µF, La = 0.1 mH.

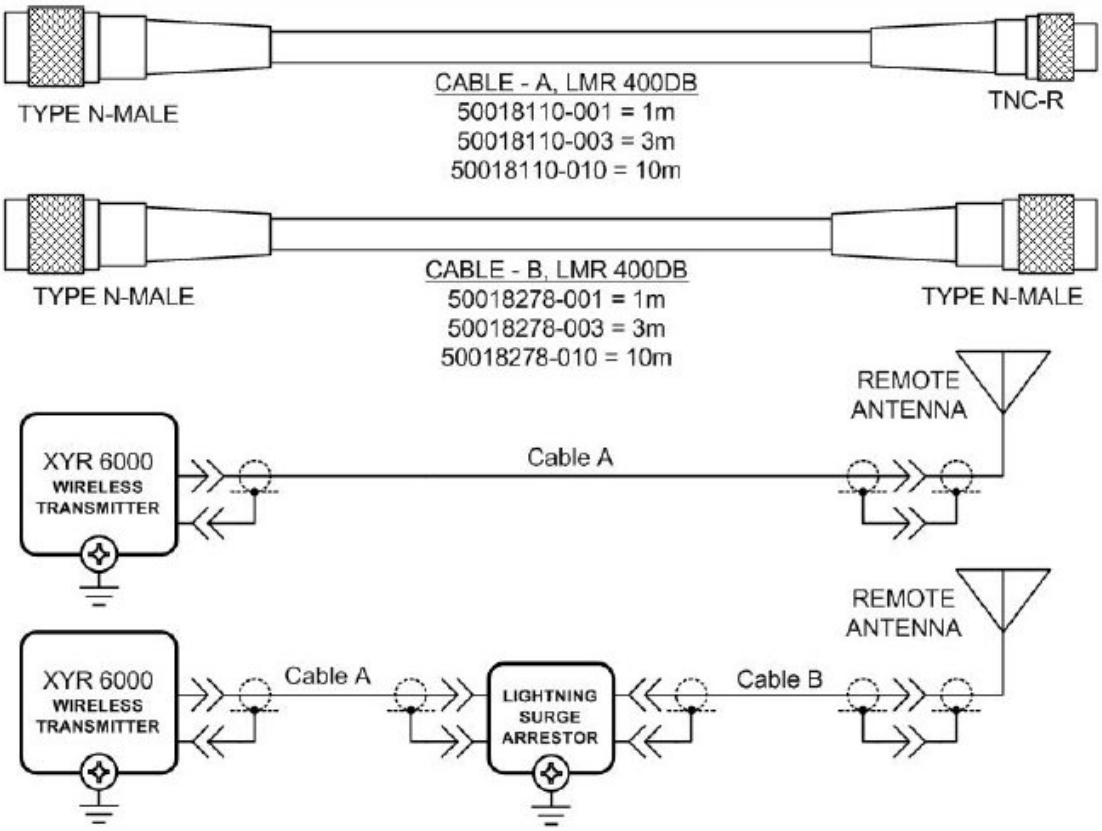
Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.8 of 11


24Vdc IS POWER SUPPLY OPTION (DC)
(SYSTEM DIAGRAM)
HAZARDOUS LOCATION
Ex ia IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC
Ex nA [nL] IIC; T4 Ta = 80ºC; DIP A22 IP66 T90ºC
AMBIENT LIMITS: –40 < Ta < 80°C
XYR 6000
TRANSMITTER
(TYPICAL)
152m (500 ft.) Max
Maximum Cable Capacitance ≤ 30nF
and Maximum Cable Inductance
≤ 0.01mH - See Note 5
REFER TO MANUAL
24V
Terminate and insulate shield as close to terminal block as possible
10
Cable to be shielded twisted pair with total loop resistance ≤ 6.6Ω
NON-HAZARDOUS or ZONE 2 LOCATION
MTL 728P+, BAS01ATEX7202, [EEx ia IIC] (-20ºC ≤ Ta ≤ +60ºC), BAS01ATEX7203, [EEx ia IIC] IIB
(-20ºC ≤ Ta ≤ +60ºC), - MTL 7728P+, BAS01ATEX7217, [EEx ia] IIC (-20ºC ≤ Ta ≤ +60ºC)
BARRIER ENTITY OUTPUT / LOAD PARAMETERS (TERMINALS 3 & 4)
Uo = 28 V, Io = 171 mA, Po = 1.2 W, Rmin = 234.6 Ω, Co = 2.15 µF, Lo = 14 mH, L/R 340 µH/Ω
ASSOCIATED APPARATUS ENCLOSURE
(RATED FOR THE ENVIRONMENT WHERE INSTALLED)
MTL 728P+
MTL 7728P+
24 Vdc Supply
21 Vmin
26.0 Vmax
(+)
(–)
1
2
3
4
11
GROUND SHIELD AT THIS END ONLY
NON-HAZARDOUS LOCATION
24 Vdc Supply
16.0 Vmin
28.0 Vmax
100 mAmax
+
–
GROUND SHIELD AT THIS END ONLY
11
Honeywell
A/A4
50033269
SCALE NONE
REV: E
DATE: 09/15/10
SH.9 of 11



Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.10 of 11

IS parameters for remote antennas, cables & lightning arrestor:
Ca = 43 µF, La = 0.1 mH.



CABLE PARAMETERS			LIGHTNING SURGE ARRESTOR PARAMETERS
CABLE A, B LENGTH	CAPACITANCE	INDUCTANCE	
1 m	78.4 pF	0.2 µH	CAPACITANCE = 1 pF
3 m	235.2 pF	0.6 µH	INDUCTANCE = 10 nH
10 m	784 pF	2.0 µH	

Honeywell	A/A4	50033269	
	SCALE NONE	REV: E DATE: 09/15/10	SH.11 of 11

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PRE REL		
ISS	REVISION & DATE	APPD
D	09162010 ECO-0069377	VM

IECEx INTRINSICALLY SAFE (ia) AND NON-SPARKING (n) INSTALLATION CONTROL DRAWING XYR 6000 WIRELESS TRANSMITTERS

NOTES:

1. Electrical apparatus and circuits can be used in zone 0 if they are in accordance with IEC 60079-11 (category "ia" – intrinsic safety), the applicable parts of IEC 60079-0 and with the requirements of IEC 60079-14, 12.3 (see also 5.2.4).
2. Electrical apparatus and circuits can be used in zone 2 if they are in accordance with IEC 60079-15, the applicable parts of IEC 60079-0 and with the requirements of IEC 60079-14, 12.2.
3. IECEx certified intrinsically safe apparatus shall be installed in accordance with the manufacturer's Intrinsic Safety Control Drawing or shall be Simple Apparatus. Simple Apparatus are devices that will neither generate nor store more than 1.2V, 0.1A, 25mW, or 20µJ, such as switches, thermocouples, and RTDs. IECEx certified non-sparking apparatus shall bee installed per this control drawing.
4. Intrinsic Safety system parameters shall comply with the following:
   $U_o \leq U_i$, $I_o \leq I_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$, $P_o \leq P_i$. Where two separate barrier channels are required, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters that meet the above equations.
5. System Parameters:
   XYR 6000 and Field Transmitter $U_i \geq U_o$, $I_i \geq I_o$;
   XYR 6000 C_i + Field Transmitter C_i + $C_{cable} \leq$ Associated Apparatus C_o,
   XYR 6000 L_i + Field Transmitter L_i + $L_{cable} \leq$ Associated Apparatus L_o.
6. When the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 197pF/m, Inductance – 0.66µH/m.
7. For IECEx 60079-0 Ex II/III installations where rigid metal conduit is not used, seal cable entries against dust and fibers using a certified cable gland fitting.
8. Control equipment that is connected to associated apparatus must not use or generate more than 250 V.
9. Associated apparatus must be IECEx certified. Associated apparatus may be installed in a Zone 2 location if so approved.
10. Non-Galvanically isolated apparatus (grounded Zener Barriers) must be connected to a suitable ground electrode per IEC 60079-14, Clause 12.2.4. The resistance of the ground path must be less than 1.0 ohm.
11. Shielded two-wire cable is required for EMC conformity and is recommended for all installations. The 4-20 mA loop shield shall be grounded at the supply (barrier) end to the barrier ground bus only when grounded Zener barriers are used. The 4-20 mA loop shield shall be grounded at the transmitter end only when galvanically isolated barriers are used.

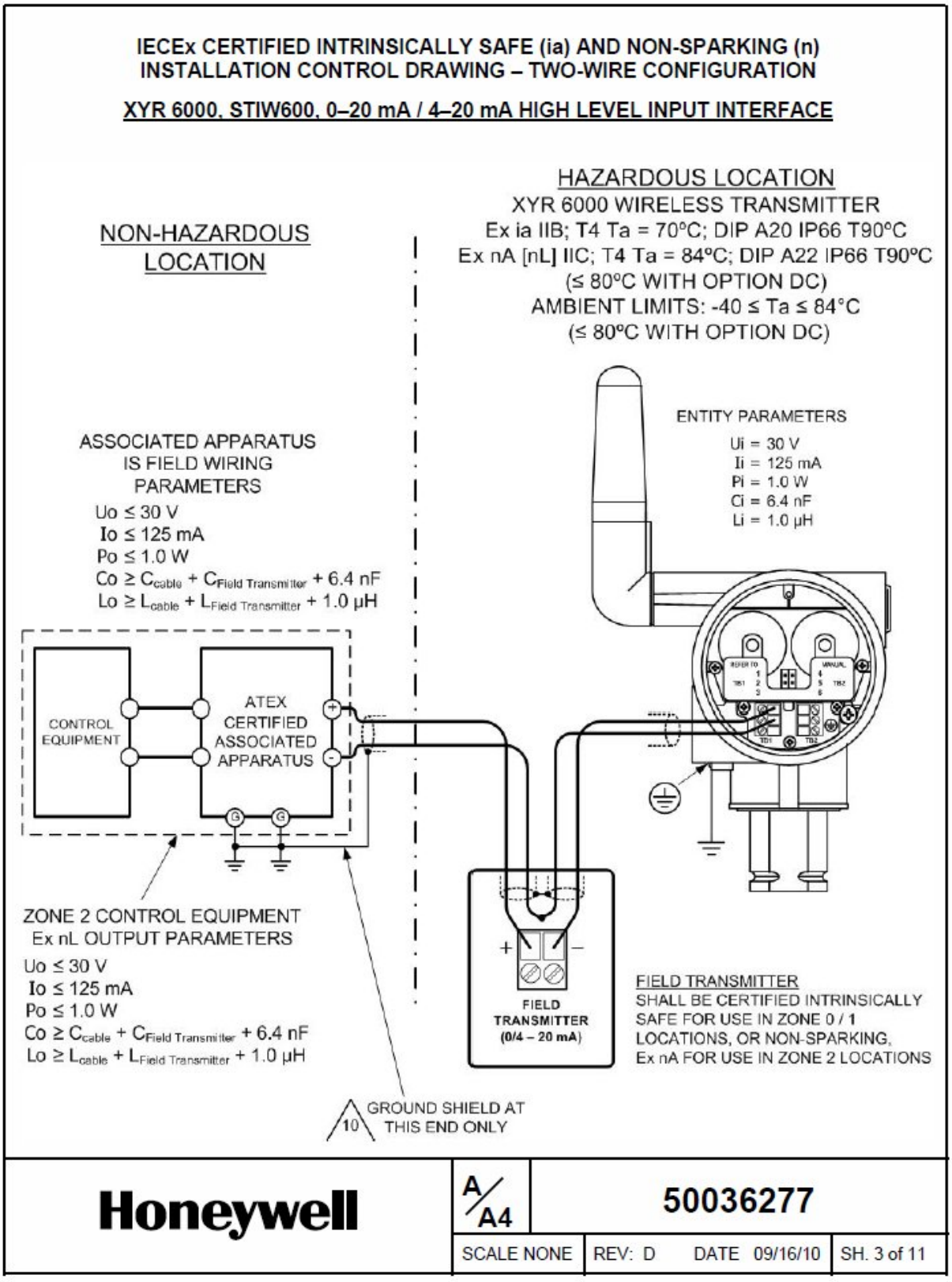
MASTER FILE TYPE: MS WORD

CERTIFICATION DOCUMENT				Honeywell		
ENGINEERING CHANGE ORDERS (ECOs) MUST BE AUTHORIZED BY APPROVALS ENGINEERING	DRAWN	F.Kent		IECEx Control Drawing XYR 6000 Wireless Transmitters Zones 0, 1 & 2		
	CHECKED					
	DEV ENG	NOTE 15				
	MFG ENG					
	QA ENG			A A4	50036277	
	TOLERANCE UNLESS NOTED ANGULAR DIMENSION			SCALE	USED ON	SH.1 OF 11

12. Zone 0 or Zone 1: WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS.
13. Zone 2: WARNING: EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
14. NO REVISION OF THIS CONTROL DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM THE NOTIFIED BODY.
15. For release approvals see ECO # 0049814.

XYR 6000 STIW600	Field Transmitter	Associated Apparatus
U_i = 30 V	$U_i \geq$	$U_o \leq$ 30 V
I_i = 125 mA	$I_i \geq$	$I_o \leq$ 125 mA
P_i = 1.0 W	$P_i \geq P_o$	$P_o \leq \frac{(V_{oc} \text{ or } V_t \cdot I_{sc} \text{ or } I_t)}{4} \leq$ 1.0 W
C_i = 6.4 nF	$C_i \leq$ Associated Apparatus Co – Ccable – Ci of other transmitter connected to two-channel barrier.	$C_o >$ 6.4 nF
L_i = 1.0 µH	$L_i \leq$ Associated Apparatus Lo – Lcable – Li of other transmitter connected to two-channel barrier.	$L_o >$ 1.0 µH

Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 2 of 11

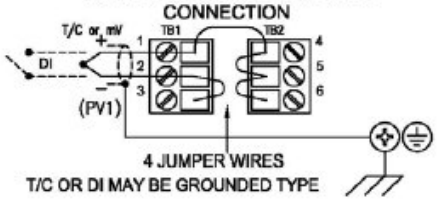

IECEx CERTIFIED INTRINSICALLY SAFE (ia) AND NON-SPARKING (n)
INSTALLATION CONTROL DRAWING – TWO-WIRE CONFIGURATION
XYR 6000, STIW600, 0–20 mA / 4–20 mA HIGH LEVEL INPUT INTERFACE
NON-HAZARDOUS LOCATION
HAZARDOUS LOCATION
XYR 6000 WIRELESS TRANSMITTER
Ex ia IIB; T4 Ta = 70°C; DIP A20 IP66 T90°C
Ex nA [nL] IIC; T4 Ta = 84°C; DIP A22 IP66 T90°C
(≤ 80°C WITH OPTION DC)
AMBIENT LIMITS: -40 ≤ Ta ≤ 84°C
(≤ 80°C WITH OPTION DC)
ENTITY PARAMETERS
Ui = 30 V
Ii = 125 mA
Pi = 1.0 W
Ci = 6.4 nF
Li = 1.0 µH
ASSOCIATED APPARATUS IS FIELD WIRING PARAMETERS
Uo ≤ 30 V
Io ≤ 125 mA
Po ≤ 1.0 W
Co ≥ Ccable + CField Transmitter + 6.4 nF
Lo ≥ Lcable + LField Transmitter + 1.0 µH
CONTROL EQUIPMENT
ATEX CERTIFIED ASSOCIATED APPARATUS
ZONE 2 CONTROL EQUIPMENT
Ex nL OUTPUT PARAMETERS
Uo ≤ 30 V
Io ≤ 125 mA
Po ≤ 1.0 W
Co ≥ Ccable + CField Transmitter + 6.4 nF
Lo ≥ Lcable + LField Transmitter + 1.0 µH
FIELD TRANSMITTER (0/4 – 20 mA)
FIELD TRANSMITTER
SHALL BE CERTIFIED INTRINSICALLY SAFE FOR USE IN ZONE 0 / 1 LOCATIONS, OR NON-SPARKING, Ex nA FOR USE IN ZONE 2 LOCATIONS
10 GROUND SHIELD AT THIS END ONLY
Honeywell
A/A4
50036277
SCALE NONE
REV: D
DATE 09/16/10
SH. 3 of 11

WIRELESS TEMPERATURE AND DIGITAL INPUT(DI) TRANSMITTERS
STTW400, STTW401, STXW500, STT820, STTW830 & STTW840

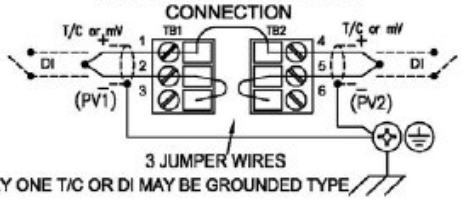
HAZARDOUS LOCATION

Ex ib [ia] IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC (WITH OPTION BA)
Ex nA [nL] IIC; T4 Ta = 84ºC; DIP A22 IP66 T90ºC (< 80ºC WITH OPTION DC)
AMBIENT LIMITS: –40 < Ta < 84°C (< 80°C WITH OPTION DC)

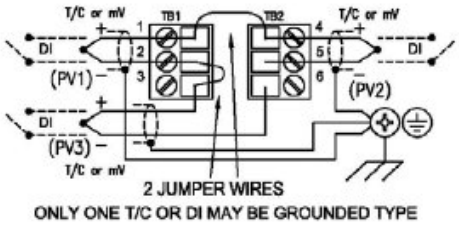
SINGLE THERMOCOUPLE OR DI CONNECTION



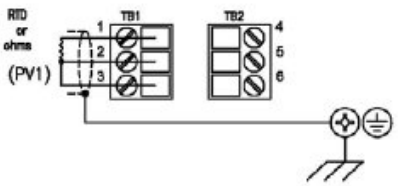
TWO THERMOCOUPLE OR DI CONNECTION



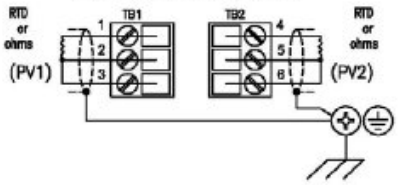
THREE THERMOCOUPLE OR DI CONNECTION



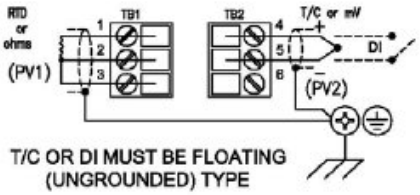
SINGLE THREE-WIRE RTD



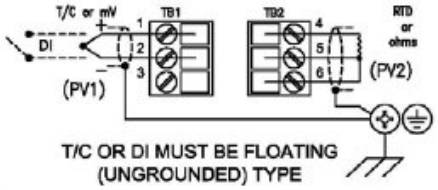
TWO THREE-WIRE RTD's



SINGLE THREE-WIRE RTD & T/C OR DI



T/C OR DI & SINGLE THREE-WIRE RTD



IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:
1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

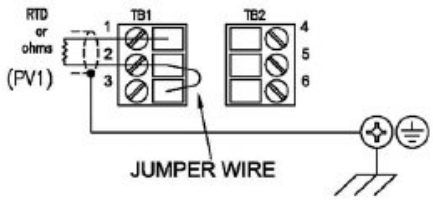
Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 4 of 11

WIRELESS TEMPERATURE AND DIGITAL INPUT(DI) TRANSMITTERS
STTW400, STTW401, STXW500, STT820, STTW830 & STTW840

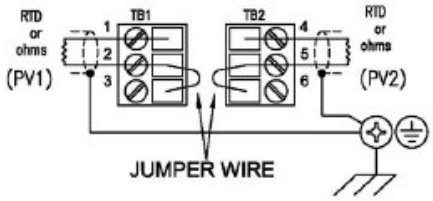
HAZARDOUS LOCATION

Ex ib [ia] IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC (WITH OPTION BA)
Ex nA [nL] IIC; T4 Ta = 84ºC; DIP A22 IP66 T90ºC (< 80ºC WITH OPTION DC)
AMBIENT LIMITS: –40 < Ta < 84°C (< 80°C WITH OPTION DC)

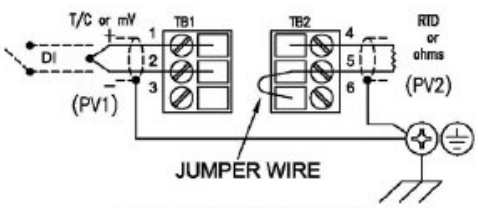
SINGLE TWO-WIRE RTD



TWO TWO-WIRE RTD

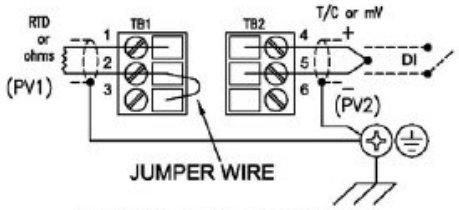


T/C OR DI & SINGLE TWO-WIRE RTD



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

SINGLE TWO-WIRE RTD & T/C OR DI



T/C OR DI MUST BE FLOATING
(UNGROUNDED) TYPE

IS FIELD WIRING PARAMETERS

WITH OPTION DC
$Ca = 2.7\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

WITH OPTION BA
$Ca = 9.3\ \mu F \geq C_{Cable}$
$La = 100\ mH \geq L_{Cable}$

NOTES:
1. Shielded thermocouple/mV or RTD/Ohms cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
2. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
3. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV inputs and RTD/Ohms inputs must be insulated from ground (the probe) and from each other as noted above.
4. Jumper wires the same gauge and stranding as the thermocouple wires are required for single and dual thermocouple input combinations.
5. Digital input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 5 of 11

WIRELESS UNIVERSAL I/O - STUW700 & STUW701

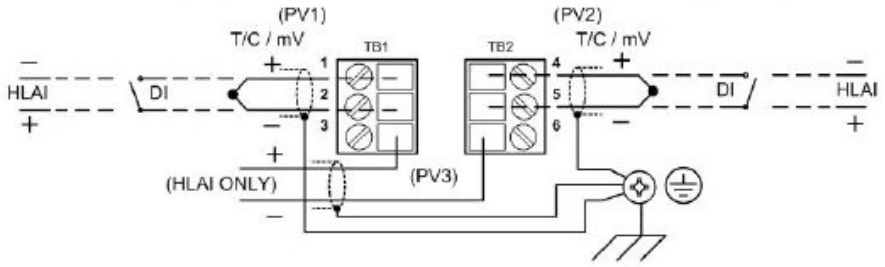
HAZARDOUS LOCATION

Ex ia IIB; T4 Ta ≤ 70ºC; DIP A20 IP66 T90ºC

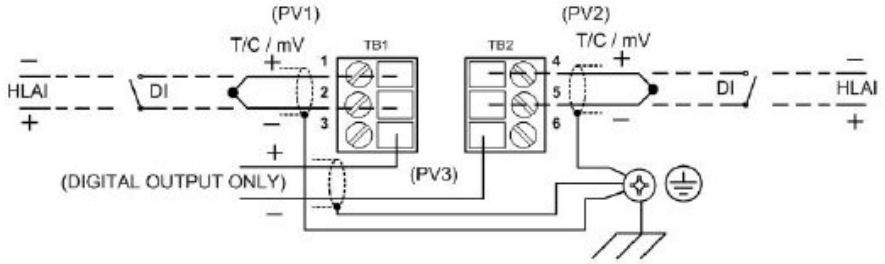
Ex nA [nL] IIC; T4 Ta ≤ 84ºC (≤ 80ºC WITH OPTION DC) DIP A22 IP66 T90ºC

AMBIENT LIMITS: -40 ≤ Ta ≤ 84°C (≤ 80ºC WITH OPTION DC)

STUW700 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI) AND HIGH LEVEL ANALOG INPUT (HLAI)



STUW701 - POSSIBLE CONNECTIONS T/C, mV, DIGITAL INPUT (DI), HIGH LEVEL ANALOG INPUT (HLAI) AND DIGITAL OUTPUT (DO)



HIGH LEVEL ANALOG INPUT & DIGITAL OUTPUT ENTITY PARAMETERS

Ui (Vmax) = 30 V
Ii (Imax) = 125 mA
Pi = 1.0 W
Ci = 6.8 nF
Li = 0.1 µH

DIGITAL INPUT AND T/C FIELD WIRING PARAMETERS

Ca = 2.7 µF ≥ C_{Cable}
La = 100 mH ≥ L_{Cable}

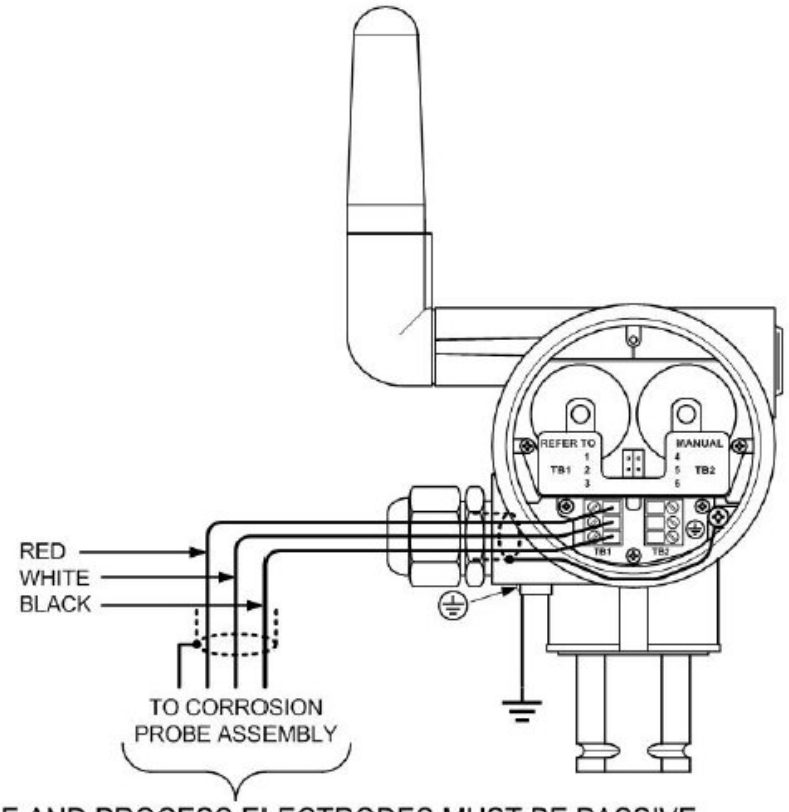
NOTES:

1. Shielded HLAI, DI, DO, thermocouple, mV, or switch input cable is required for EMC conformity and is recommended for all installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the switch, remote HLAI transmitter location, or remote DO supply the shield shall not be connected at the Wireless transmitter end.

Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 6 of 11

XYR 6000, MODEL CETW6000M-W WIRELESS CORROSION TRANSMITTER AND CETW6000M-D SmartCET CORROSION DATALOGGER

Ex ia IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC
Ex nA [nL] IIC; T4 Ta = 84ºC DIP A22 IP66 T90ºC (≤ 80ºC WITH OPTION DC)
AMBIENT LIMITS: -30ºC ≤ Ta ≤ 84°C (≤ 80ºC WITH OPTION DC)



PROBE AND PROCESS ELECTRODES MUST BE PASSIVE ELEMENTS ONLY. PROBE AND CABLE PARAMETERS MUST NOT EXCEED 43 µF ≥ C_{PROBE} + C_{CABLE} AND 0.25 mH ≥ L_{PROBE} + L_{CABLE}

NOTE: The Probe connections are "ia" for connection to Zone 0 processes. The Probe used with the Corrosion Transmitter must be acceptable to the competent body having jurisdiction with respect to pressure and temperature ratings.

Honeywell	A/A4	50036277		
	SCALE NONE	REV: D	DATE 09/16/10	SH. 7 of 11

The following models may be supplied with internal battery power, or externally supplied 24Vdc only when connected to the MTL Associated Apparatus listed on the following system diagram.

NOTE: XYR 6000 ambient limits with 24V Power Supply are –40°C to +80°C.

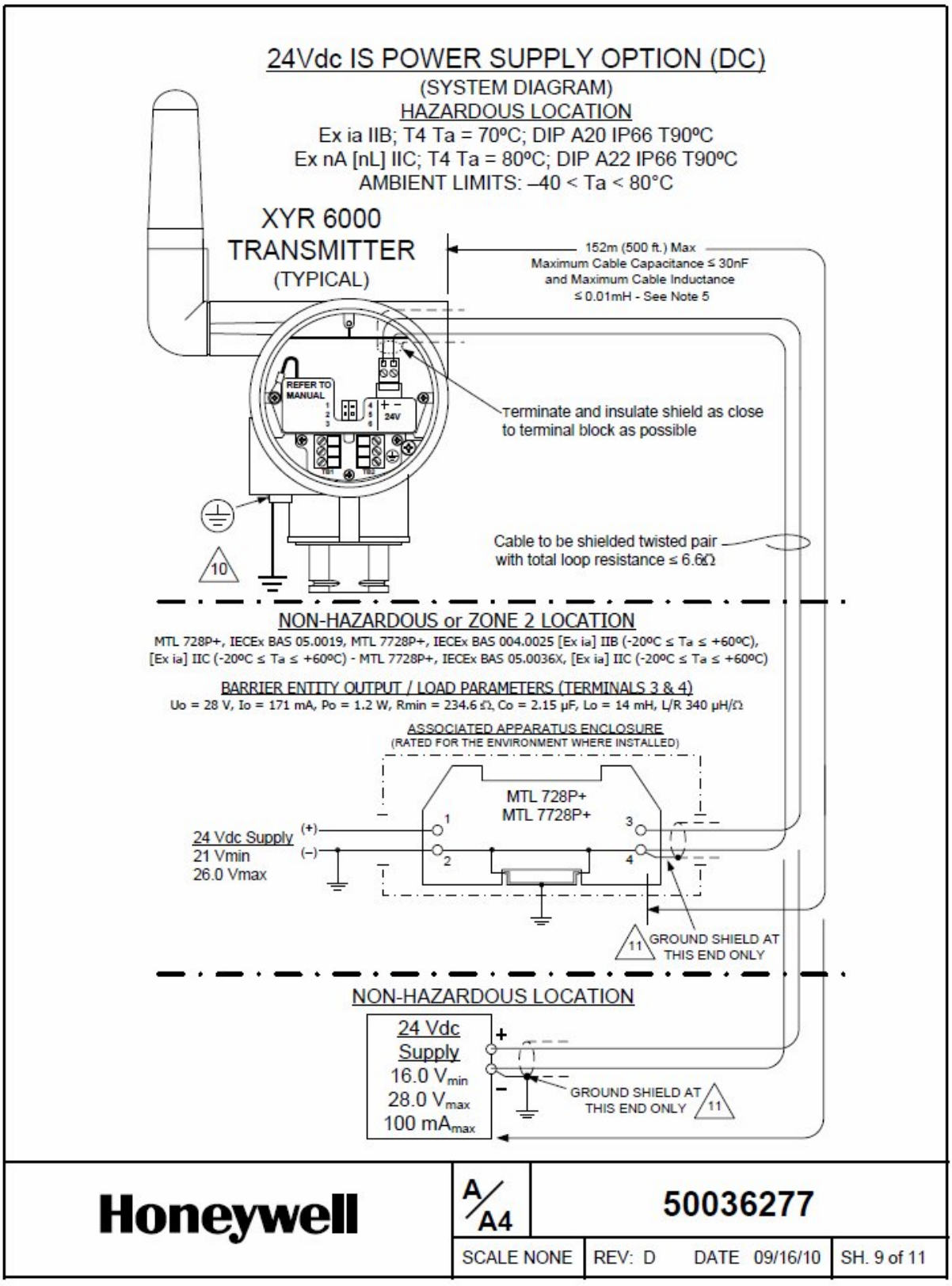
Model	Description	
STGW944	Series 900 Wireless Transmitter, Dual Head Gage Pressure (GP)	0-500 psi / 0-35 bar
STGW974		0-3000 psi / 0-210 bar
STDW924	Series 900 Wireless Transmitter, Differential Pressure (DP)	0-400" H_2O / 0-1000 mbar
STDW930		0-100 psi / 0-7 bar
STDW974		0-3000 psi / 0-210 bar
STGW94L	Series 900 Wireless Transmitter, In-Line Gage & Absolute Pressure	0-500 psig / 0-35 bar
STGW97L		0-3000 psig / 0-210 bar
STGW98L		0-6000 psig / 0-415 bar
STGW99L		0-10,000 psi / 0-690 bar
STAW94L		0-500 psi / 0-35 barA
STTW400	Wireless Temperature Transmitter	Transmitter Only with Remote Sensors: 3 T/C's, or 2 RTD's
STTW401	Wireless Temperature and Digital Input Transmitter	Transmitter Only with Remote Sensors: 1 T/C AND 2 Digital Inputs
STXW500	Wireless Digital Input Transmitter	Three DI (Switch) Inputs
STUW700	Wireless Universal I/O Interface	Three Inputs: 4-20 mA Analog, T/C's, or DI (Switch)
STUW701	Wireless Universal I/O Interface	Two Inputs: 4-20 mA Analog, T/C or DI and One Digital Output (Solid State)
STTW820 STTW830 STTW840	Wireless Temperature Transmitter	Transmitter Integrally Mounted to Thermowell or Probe Assembly
STIW600	Wireless High Level Input Interface	4-20 mA Analog Input
CETW6000M-W	SmartCET Wireless Transmitter, Corrosion Monitoring	Millivolt Input from Remote Mounted Corrosion Probe
CETW6000M-D	SmartCET Corrosion Data Logger	Millivolt Input from Remote Mounted Corrosion Probe, Data via IrDA Port *

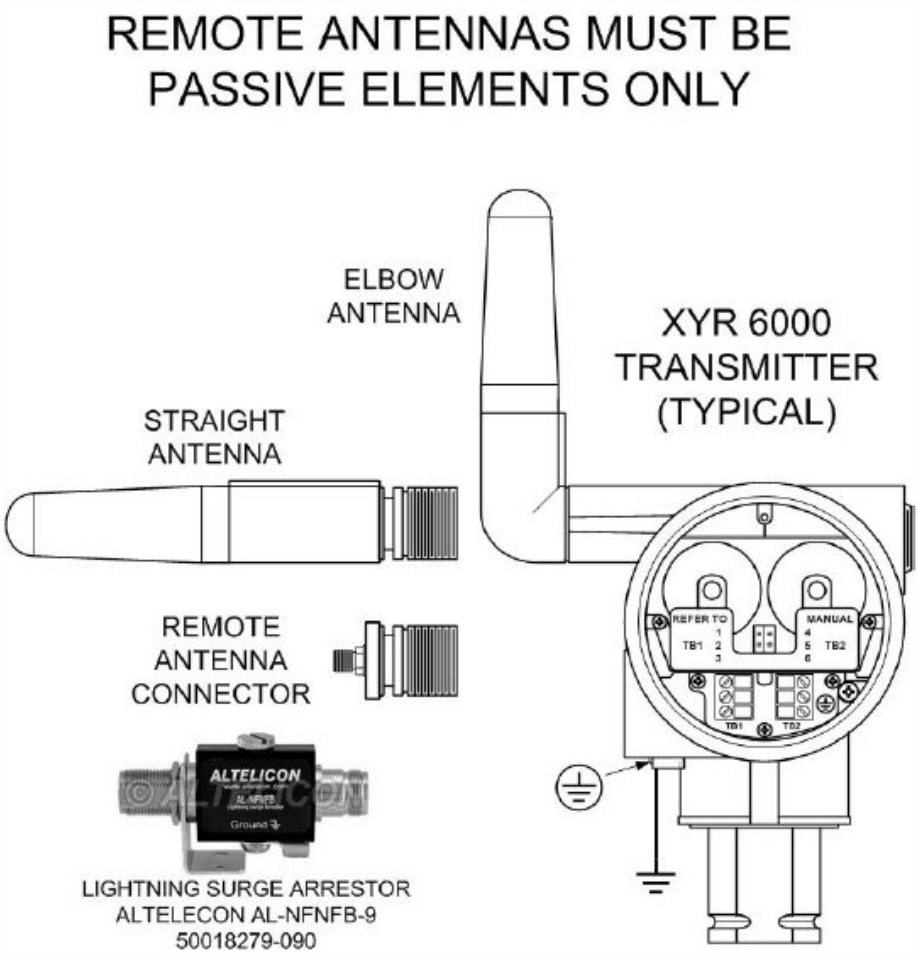
* There is no Antenna for this version

The above listed wireless transmitters may include an Omni-directional or unidirectional high-gain antenna. The high-gain antenna may be installed remote from the XYR 6000 with the cable length not to exceed 20m. The antenna cable shield shall be bonded to earth ground.

IS Entity parameters for remote antennas, cables & lightning arrestor:
Ca = 43 µF, La = 0.1 mH.

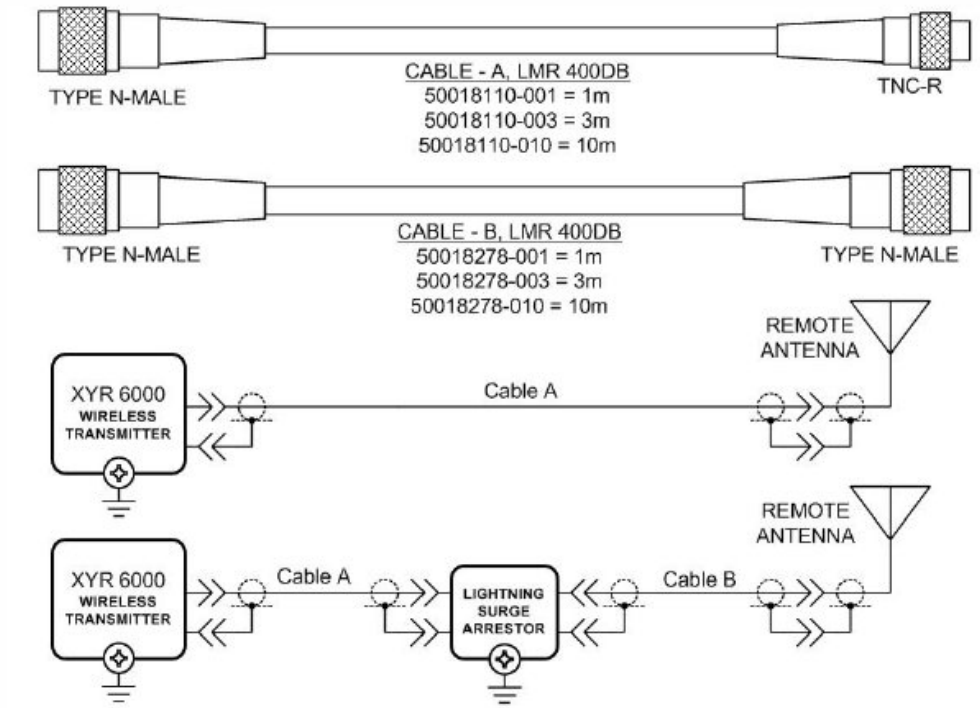
Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 8 of 11


24Vdc IS POWER SUPPLY OPTION (DC)
(SYSTEM DIAGRAM)
HAZARDOUS LOCATION
Ex ia IIB; T4 Ta = 70ºC; DIP A20 IP66 T90ºC
Ex nA [nL] IIC; T4 Ta = 80ºC; DIP A22 IP66 T90ºC
AMBIENT LIMITS: –40 < Ta < 80°C
XYR 6000
TRANSMITTER
(TYPICAL)
152m (500 ft.) Max
Maximum Cable Capacitance ≤ 30nF
and Maximum Cable Inductance
≤ 0.01mH - See Note 5
REFER TO MANUAL
24V
Terminate and insulate shield as close to terminal block as possible
Cable to be shielded twisted pair with total loop resistance ≤ 6.6Ω
10
NON-HAZARDOUS or ZONE 2 LOCATION
MTL 728P+, IECEx BAS 05.0019, MTL 7728P+, IECEx BAS 004.0025 [Ex ia] IIB (-20ºC ≤ Ta ≤ +60ºC),
[Ex ia] IIC (-20ºC ≤ Ta ≤ +60ºC) - MTL 7728P+, IECEx BAS 05.0036X, [Ex ia] IIC (-20ºC ≤ Ta ≤ +60ºC)
BARRIER ENTITY OUTPUT / LOAD PARAMETERS (TERMINALS 3 & 4)
Uo = 28 V, Io = 171 mA, Po = 1.2 W, Rmin = 234.6 Ω, Co = 2.15 µF, Lo = 14 mH, L/R 340 µH/Ω
ASSOCIATED APPARATUS ENCLOSURE
(RATED FOR THE ENVIRONMENT WHERE INSTALLED)
MTL 728P+
MTL 7728P+
24 Vdc Supply
21 Vmin
26.0 Vmax
(+)
(–)
1
2
3
4
11
GROUND SHIELD AT THIS END ONLY
NON-HAZARDOUS LOCATION
24 Vdc Supply
16.0 Vmin
28.0 Vmax
100 mAmax
+
–
GROUND SHIELD AT THIS END ONLY
11
Honeywell
A/A4
50036277
SCALE NONE
REV: D
DATE 09/16/10
SH. 9 of 11



Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 10 of 11

REMOTE ANTENNA CABLES



CABLE PARAMETERS			LIGHTNING SURGE ARRESTOR PARAMETERS
CABLE A, B LENGTH	CAPACITANCE	INDUCTANCE	
1 m	78.4 pF	0.2 µH	CAPACITANCE = 1 pF
3 m	235.2 pF	0.6 µH	INDUCTANCE = 10 nH
10 m	784 pF	2.0 µH	

Honeywell	A/A4	50036277	
	SCALE NONE	REV: D DATE 09/16/10	SH. 11 of 11

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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